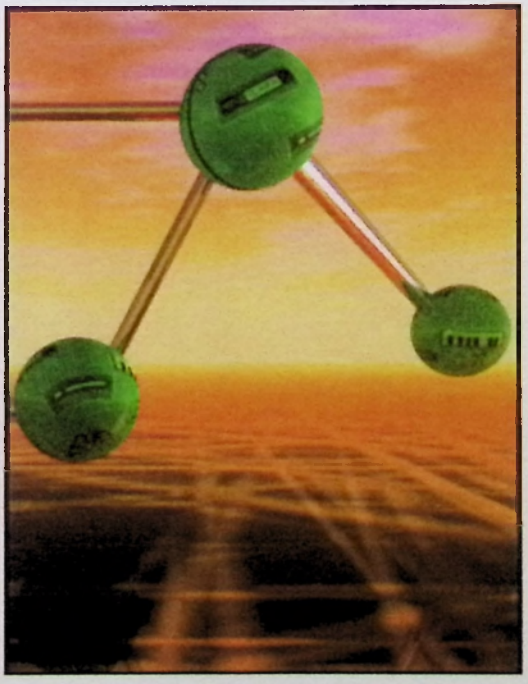
Studio Patches Manual

For Studio 4 and Studio 5LX



OPCODE

OMS Studio Patches

Opcode Systems, Inc.
3950 Fabian Way, Suite 100
Palo Alto, CA 94303

Opcode Part Number: 110-0221-00

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Manual written by Gregory A. Simpson and Jon Drukman.

OMS, OMS Setup, and Studio Patches Editor by Doug Wyatt.

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CHAPTER 1: Studio Patch Introduction

WHAT ARE STUDIO PATCHES?

Studio Patches connect the MIDI devices defined in your current Studio Setup document. They should not be confused with the Studio 4's Routing Channelizing and Muting window.

Studio Patches are designed on the Macintosh using the Studio Patches Editor application. They can then be stored in files on the hard drive (called "patch documents"), or in the Studio 5's internal memory, if you have a Studio 5.

Each patch document may contain:

- Up to 128 patches
- Any number of Virtual Controllers
- Any number of Virtual Instruments
- Any number of Program Change Sources
- A Patch Chain

Virtual Controllers and **Virtual Instruments** are extremely powerful features of Studio Patches. A Virtual Controller is the output of a MIDI device plus some form of MIDI processing. A Virtual Instrument is some form of MIDI processing routed to one or more MIDI devices. Virtual Controllers and Virtual Instruments can be valuable aids for both sequencing and live performance. They're discussed in Chapter 3: Virtual Controllers and Virtual Instruments.

Program Change Sources allow you to specify various ways to change Studio Patches. They're discussed in Chapter 4: Program Change Sources.

A **Patch Chain** is a sequence of patches which can be stepped through with a MIDI controller, or the Studio 5's optional footswitches.

Patches are strictly real-time, live-playing MIDI connections; they do not actually affect the MIDI data that an application sends or receives. MIDI applications will always receive from the sources to which they are connected and be able to send to any destinations, regardless of what the current patch does.

NOTE: The Studio 4 does not store any patches; if it is disconnected from the computer, it cannot use Studio Patches. It still can use its internal Routing, Channelizing and Muting setup however—see the Studio 4 Manual for details. The Studio 5 has internal memory for up to 128 patches.

Although Studio Patches require a Studio 4 or Studio 5, you can use devices that aren't attached to the interface (such as a SampleCell card) in patch documents.

Studio 4 owners must keep the Studio Patches Editor application open to use Studio Patches. Studio 5 owners do not require any special software active—the patches reside in the Studio 5 itself.

NOTE: Studio Patch processing occurs in addition to any processing performed by your sequencing application or your Studio 4 Routing, Channelizing and Muting window. When you are first learning to use Studio Patches, you may want to disable any routings created in these ways.

Also, since most sequencers control MIDI thru from within the application, you may wish to keep Studio Patch #1 an "empty" or "do nothing" patch for use with sequencer programs.

PATCH DOCUMENTS

This section discusses the terminology and techniques for working with patch documents.

Balloon help is available at any time throughout the Studio Patches Editor application. See your Macintosh documentation if you don't know how to access balloon help.

Open the Studio Patches Editor application by double-clicking its icon.

Studio Patches Editor

Opening a New Patch Document

Open a new patch document by choosing **New Patch Document** from the **File** menu (or type ⌘N).

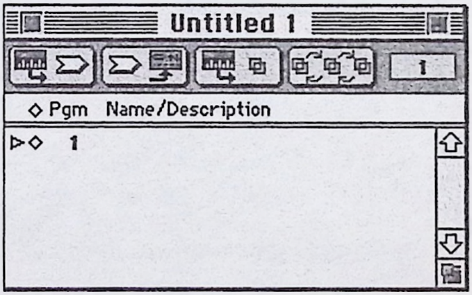
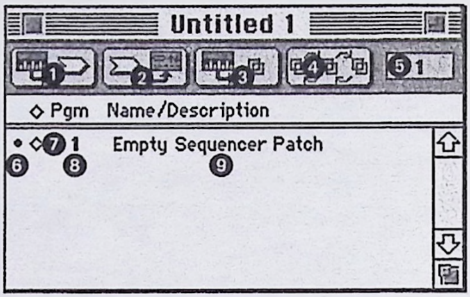


Figure 1.1: Patch Document Window

Patch Document Window Terminology

When you open a new patch document window, you'll see four buttons under the title bar. From left to right these represent Virtual Controllers, Virtual Instruments, Program Change Sources, and the Patch Chain. Each of these buttons will be defined later in this manual. Below the buttons is a line for the first patch in the document. This line consists of a selector dot, a diamond to indicate the current patch, the program (or patch) number and a Name/Description field that can hold as much text as needed to describe the operation of that patch.

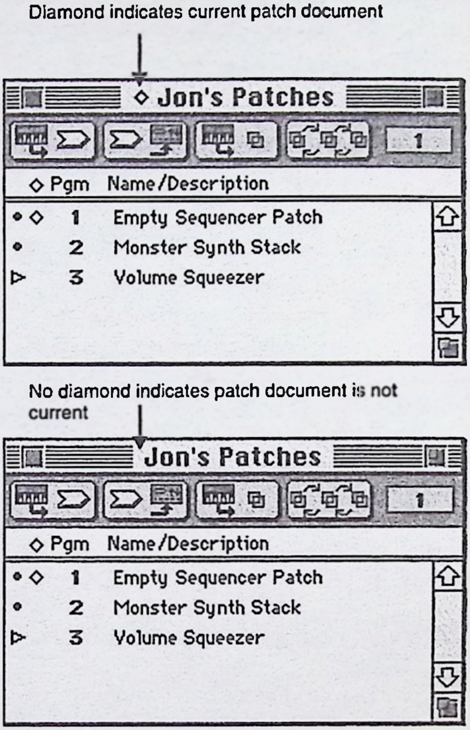


		Pgm	Name/Description
•	◇	1	Empty Sequencer Patch

Figure 1.2: Anatomy of a Patch Document Window

❶ Virtual Controllers Button
❷ Virtual Instruments Button
❸ Program Change Source Button
❹ Patch Chain Button
❺ Current Patch Selector
❻ Selector Dot
❼ Current Patch Indicator
❽ Patch Number
❾ Patch Description Field

You can have any number of patch documents open at one time, but only one document can be the *current* patch document. The current patch document is indicated by a diamond next to its name.



Diamond indicates current patch document

		Pgm	Name/Description
•	◇	1	Empty Sequencer Patch
•		2	Monster Synth Stack
▷		3	Volume Squeezer

No diamond indicates patch document is not current

		Pgm	Name/Description
•	◇	1	Empty Sequencer Patch
•		2	Monster Synth Stack
▷		3	Volume Squeezer

Figure 1.3: Indicating Current Patch Document

The current patch document always reflects the exact state of the Studio Patches Driver and your Studio 5(s). Any changes made to a current patch document take effect immediately in the Studio 5(s) and driver, and any time that a patch document is made current, the patches in that document are sent immediately to your Studio 5(s) and take effect there and in the driver.

Patch documents are based on the devices defined in the current Studio Setup document. If you make a different Studio Setup document current, your current patch document may not know about the devices in the new Studio Setup document. Similarly, the new Studio Setup document may not know about the devices referenced by the current patch document.

NOTE: *If you create two identical Studio Setup documents, with identical names for identical instruments on identical ports, Studio Patches will see the devices as different unless you copy and paste the devices between the two documents.*

Making Patch Documents Current

Choose **Save And Make Current** from the **File** menu.

You'll see a standard Macintosh "Save As" dialog box. Save the file in the same folder as your Studio Patches Editor application. A diamond appears next to the patch document's name indicating that it is now the current patch document.

NOTE: *If a patch document has already been saved, the* **Save And Make Current** *command becomes a* **Make Current** *command.*

Adding Patches to a Patch Document

Choose **New Patch** from the **Patch** menu, or type ⌘ P to add a new patch to the document.

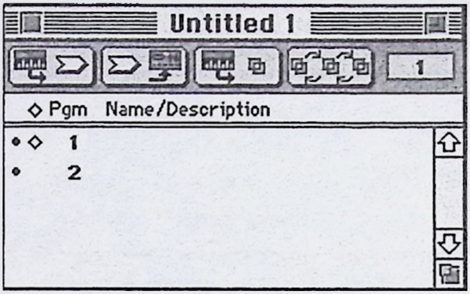


Figure 1.4: Adding a Patch

Selecting Patches

Unselected patches have a bullet dot to their far left. This is the patch selector dot. Selected patches have a small triangle instead of a bullet dot.

Click a patch's selector dot to select a patch; the bullet will turn into a triangle.

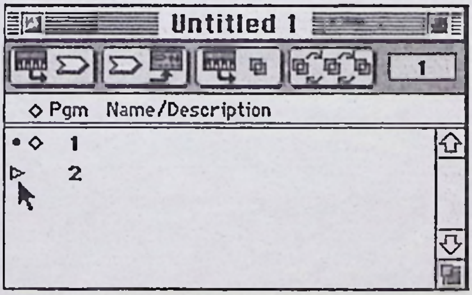


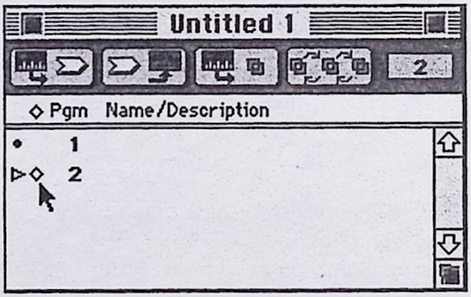
Figure 1.5: Selecting a Patch

Shift-click other selector dots to select additional patches.

Making Patches Current

The diamond to the right of the selector dot is the current patch selector. You make a patch current by clicking in the column where the diamond would appear, or by selecting a patch and choosing **Recall Patch** (⌘R) from the **Patch** menu.

Click in the column to the right of Patch #2's selector dot.



◇	Pgm	Name/Description
•	1	
▷◇	2	

Figure 1.6: Making a Patch the Current Patch

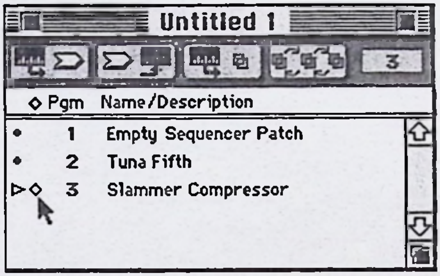
Patch #2 becomes the current patch (as indicated by the small diamond next to its number). The current patch is the patch that is being used by Studio Patches and the Studio 5.

Copying and Pasting Patches

You can copy and paste whole patches to new locations. If, in the following example, you wanted to copy patch #3 as the basis for building a new patch, you would:

① **Click Patch #3's selector dot to select it.**

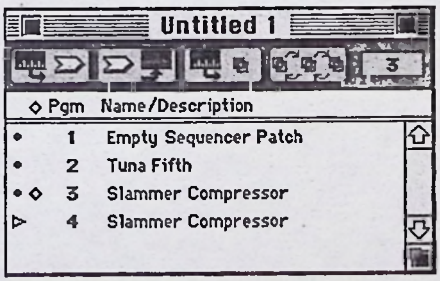
② **Choose Edit>Copy.**



◇	Pgm	Name/Description
•	1	Empty Sequencer Patch
•	2	Tuna Fifth
▷◇	3	Slammer Compressor

Figure 1.7: Selecting a Patch for Copying

③ **Choose Edit>Paste.**



◇	Pgm	Name/Description
•	1	Empty Sequencer Patch
•	2	Tuna Fifth
•◇	3	Slammer Compressor
▷	4	Slammer Compressor

Figure 1.8: Pasting a Patch

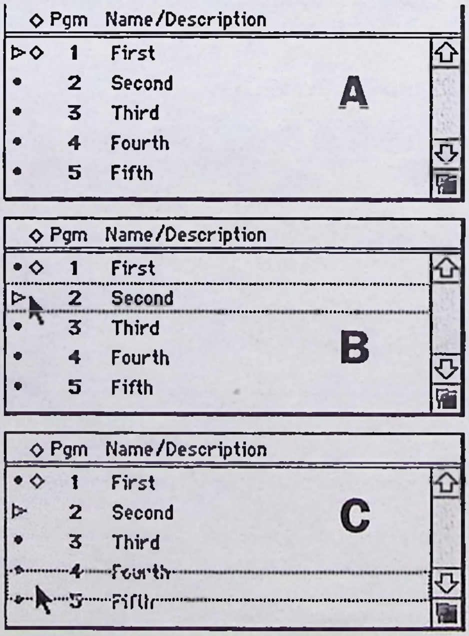
Patch #3 is copied to the next available patch location which, in this case, is Patch #4. Patch #4 is now an exact duplicate of Patch #3.

NOTE: When a patch document window is active, the Paste *command always pastes a patch to the first undefined patch. You cannot paste a copied patch to an existing patch.*

Patches can also be cut to the Clipboard or cleared.

Changing Patch Order

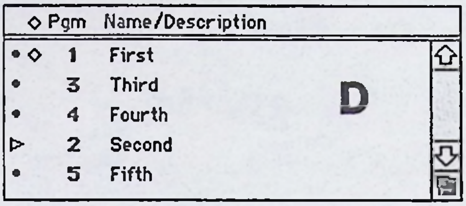
You can rearrange patches by option-click-dragging a patch to a new location. In Figure 1.9, the patch document shown in A is re-ordered by option-clicking Patch 2 (as shown in B), dragging it between Patches 4 and 5 (as shown in C), and releasing the mouse (as shown in D).



◇	Pgm	Name/Description
▷◇	1	First
•	2	Second
•	3	Third
•	4	Fourth
•	5	Fifth

◇	Pgm	Name/Description
•◇	1	First
▷	2	Second
•	3	Third
•	4	Fourth
•	5	Fifth

◇	Pgm	Name/Description
•◇	1	First
▷	2	Second
•	3	Third
•	4	Fourth
•	5	Fifth



◇	Pgm	Name/Description
•◇	1	First
•	3	Third
•	4	Fourth
▷	2	Second
•	5	Fifth

Figure 1.9: Re-ordering Patches

If you want to view your patch document in numerical order, select the **Sort by Patch Number** option from the **Patch** menu. This places a check mark to the left of the option. Patches will *always* be displayed in numerical order as long as **Sort by Patch Number** is checked. Selecting the command again will uncheck it. Patches can be displayed in *any* order when **Sort by Patch Number** is unchecked.

SEQUENCING PATCH CHANGES

You can sequence Studio Patches from an OMS-compatible MIDI sequencer.

If Studio Patches is installed, OMS always adds a device called "Studio Patches pgm chg" to your Studio Setup document. You can send program changes to this device on MIDI channel 16 to change the current Studio Patch. The main purpose of this device is to let you sequence Studio Patch changes from a sequencer. To do so:

① **Launch an OMS-compatible sequencer.**

② **Choose the "Studio Patches pgm chg" device as the record sequence's MIDI destination.**

③ **Record MIDI program changes into the sequencer.**

④ **Play back the sequence. Studio Patches will change with each MIDI Program change.**

PATCH EDITING WINDOW

This section discusses the terminology and techniques for working with patch editing windows.

Opening a Patch Editing Window

Select a patch and choose **Edit Patch** from the **Patch** menu, or double-click its selector dot. A patch editing window will open.

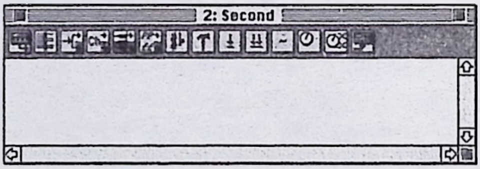
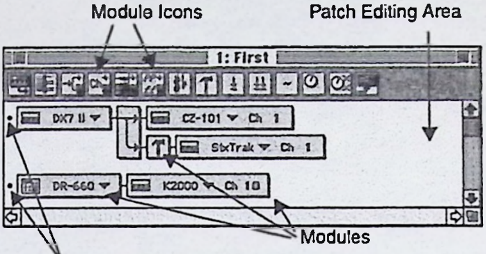


Figure 1.10: Empty Patch Editing Window

Patch Editing Window Terminology



Connections (all the connections in the patch editing area comprise one "patch.")

Figure 1.11: Anatomy of a Patch Editing Window

Figure 1.11 illustrates a basic patch editing window. The window contains a row of module icons across the top of the screen. Each of these icons represents a MIDI Source, MIDI Destination, or MIDI Processing module. The row of module icons is called a module palette. The patch editing area contains "connections", each of which comprises a MIDI Source module and all modules connected to its right. Any amount of MIDI processing can be applied to any connection. A patch is made up of all the connections in the patch editing area.

IMPORTANT: *Since most sequencers control MIDI thruing from within the application, it's useful to keep patch #1 as an "empty" or "do nothing" patch for use with sequencer programs.*

Creating Connections

This section discusses the techniques needed to create connections. Don't worry if you don't understand the function of each module; they'll be discussed in the next chapter.

① **Click the leftmost module icon in the module palette.**

This is the MIDI Source (or controller) icon. When you click it, its name is shown to the right of the module palette.

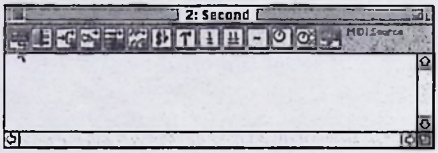


Figure 1.12: Click the MIDI Source Icon

② **Move the cursor into the patch editing area.**

The cursor will become a MIDI Source module icon.

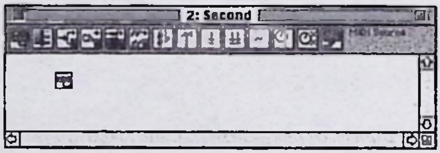


Figure 1.13: Cursor Becomes a Module Icon

③ **Click in the patch editing area to create an undefined connection.**

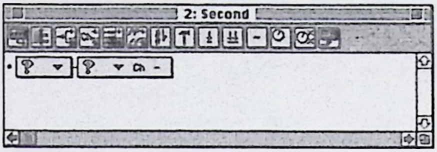


Figure 1.14: Creating an Undefined Connection

A connection appears as a selector dot along with some number of connected modules. Every connection needs both a MIDI Source and a MIDI Destination module (MIDI Source and MIDI Destination modules will be explained in the next chapter). When a MIDI Source module is first placed in the patch editing area, both an undefined MIDI Source module *and* an undefined MIDI Destination module appear. Each module contains a question mark until you choose a device from its pop-up menu.

④ **Click anywhere to the right of the MIDI Source module's question mark to see a pop-up menu of the devices defined in your current Studio Setup document.**

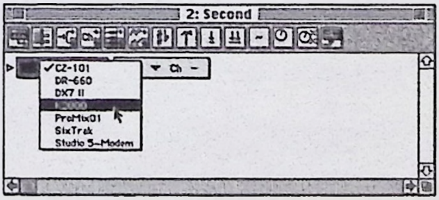


Figure 1.15: The Pop-Up Device Menu

⑤ **Select a device from the pop-up menu.**

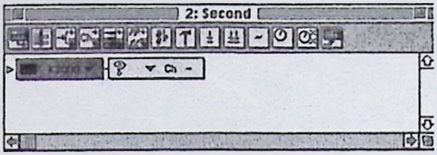


Figure 1.16: Defining a MIDI Source Device

⑥ **Click the pop-up menu triangle in the MIDI Destination module and choose a destination device.**

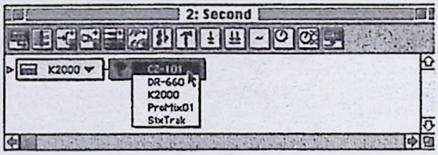


Figure 1.17: Defining a MIDI Destination Device

You've created a simple connection; the K2000 sends MIDI data directly to Channel 1 of the CZ-101. When you play the K2000, the CZ-101 will play on MIDI Channel 1.

Adding MIDI Processing

Use MIDI processing modules to filter, split, transpose, modify or map MIDI data in a variety of ways. In the following example, you'll add a Velocity Modifier module to your connection. Velocity Modifier modules (and other MIDI processing modules) are discussed in the next chapter.

① **Click the Velocity Modifier Module icon (the little hammer) in the module palette. Its name is shown to the right of the module palette.**

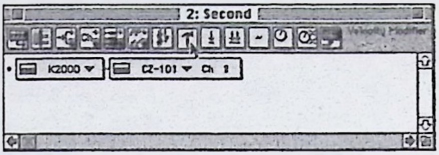


Figure 1.18: Click the Velocity Modifier Icon

② **Move the cursor into the patch editing area. The cursor will become a Velocity Modifier module icon (little hammer).**

③ **Position the cursor over the space between the MIDI Source and MIDI Destination modules. The area becomes highlighted.**

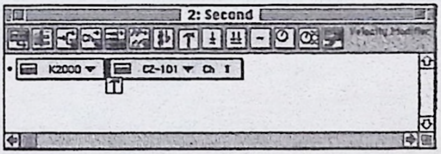


Figure 1.19: Positioning a Processing Module

④ **Click the mouse to insert the module.**

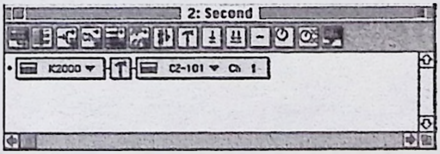


Figure 1.20: Inserting a Processing Module

Selecting Modules and Connections

You can select a module or group of modules for cutting, copying, or pasting. To select a module, click anywhere within it that isn't a control (like a device menu or channel numerical). A selected MIDI Source or MIDI Destination module will have a thick border. A selected MIDI processing module becomes highlighted.

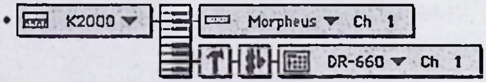


Figure 1.21: Unselected Modules

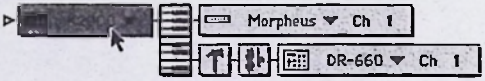


Figure 1.22: Single Selected Module

Shift-clicking a second module when one is already selected will select the second module *and* all modules between it and the first one.

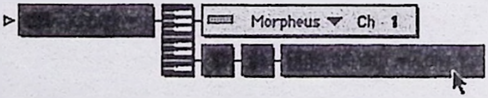


Figure 1.23: Shift-Clicking a Second Module

You can also select multiple modules by clicking in the white space around them and dragging out a rectangle. All modules that intersect the rectangle become selected.

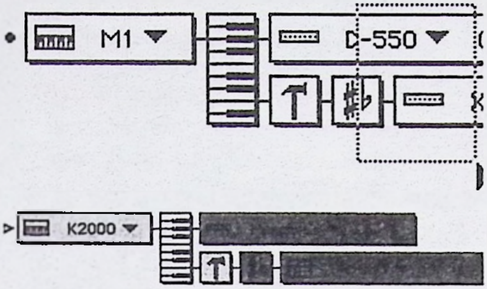


Figure 1.24: Dragging to Select Modules

You can select all modules in a connection by clicking the selector dot to the left of the modules.

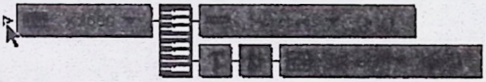


Figure 1.25: Selecting All Modules

Command-clicking modules either adds or removes them from the selection. An unselected module becomes selected. A selected module becomes deselected. In the example, below, command-click the Velocity Modifier module to deselect it.

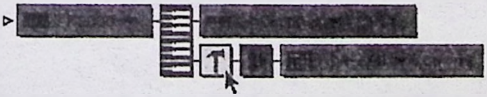


Figure 1.26: Command-Click to Deselect Modules

Copying/Pasting Modules and Connections

You may cut, copy, or clear selected modules. You cannot, however, cut or clear a Splitter module if it has more than one output. To remove a Splitter module, you must first remove either all or all but one of its outputs.

You can paste a cut or copied module to a new location by clicking the desired location and selecting the **Paste** command. The contents of the Clipboard are inserted into the selected space.

In the following example, copy the Velocity Modifier module to the Clipboard by clicking it, then choosing **Copy** from the **Edit** menu.

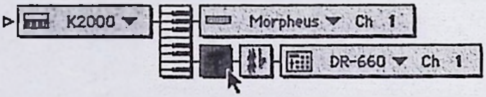


Figure 1.27: Selecting and Copying a Module

① **Place an insertion point between the Splitter module and the Morpheus Destination module by clicking the blank space between them (the space becomes highlighted).**

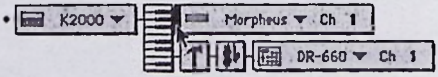


Figure 1.28: Selecting a Paste Location

② **Choose Paste from the Edit menu to paste a copy of the Velocity Modifier module and all of its parameters.**

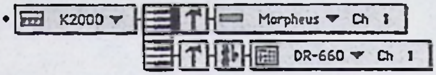


Figure 1.29: Pasting a Module

You may copy and paste entire connections without selecting a paste destination. The pasted connection appears below all other connections in the patch editing area.

You may also clear selected modules and connections, or cut them to the Clipboard.

Changing Connection Order

You can rearrange the patch editing area by option-dragging any connection's selector dot.

① **Option-click the top connection's selector dot.**

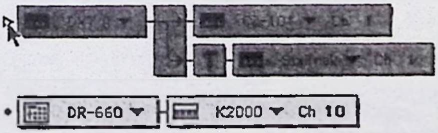


Figure 1.30: Selecting a Connection

② **While still holding the mouse button, drag the entire connection below the lower connection. Release the mouse button to see the new connection order.**

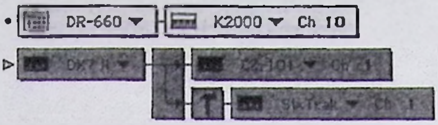


Figure 1.31: Option-Dragging a Connection

Source/Destination Muting

You can mute any number of MIDI Source or Destination modules. Muting Source and Destination modules allows you to concentrate only on specific sections of complex patches.

To mute a MIDI Source module or MIDI Destination module, double-click its device icon. The module is dimmed. To un-mute the module, double-click its device icon, again.

As an example, suppose you have the connection shown in Figure 1.32.

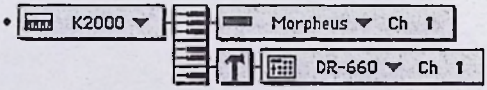


Figure 1.32: Simple Connection

① **Double-click the DR-660 device icon to mute the module. When you play the K2000, you will hear only the Morpheus.**

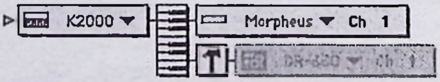


Figure 1.33: Muted Destination Module

② **Double-click the DR-660 device icon to enable the module, then double-click the K2000 device icon to mute that MIDI Source module. Anything you play or do on the K2000 will be ignored by the Morpheus and DR-660 modules.**

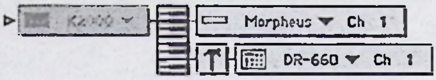


Figure 1.34: Muted Source Module

NOTE: *To mute a source or destination, be sure to double-click the device* **icon**, *not the device* **name.**

The **Solo** and **Unsolo** commands in the **Patch** menu are also useful in this regard. Soloing mutes all other destinations in the connection. When you are done soloing, choose **Unsolo** to re-enable all destinations in a patch.

CHAPTER 2: Patch Modules

This chapter describes how to configure and use each of the modules in the Module Palette.

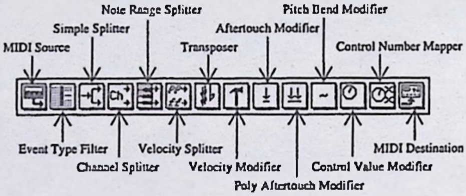


Figure 2.1: Anatomy of a Module Palette

MODULE EDITING BASICS

You can edit a module once it's part of a connection. Adding modules to connections was discussed in the previous chapter. To access the editing window of any module (except the MIDI Source module, MIDI Destination module, or Simple Splitter module) simply double-click the module in a connection.

You can edit most modules using numerical editing techniques (as discussed in your OMS manual). You can also edit the following parameters from a MIDI controller:

- control number selection in any highlighted control number pop-up menu
- Transposer map note numbers
- Note numbers in a Note Range Splitter module
- Velocity levels in a Velocity Splitter module

Select the device (or devices) you'll use for MIDI editing by choosing **Controllers for MIDI Editing** from the **Windows** menu. This produces a dialog containing a list of all devices defined in your current Studio Setup document. Select (highlight) those items you wish to enable for MIDI data entry. If you don't plan to use a MIDI controller to edit patches, it's best to disable all controllers. That way you can't accidentally edit a module by playing your MIDI controller.

The following sections discuss each module in detail.

MIDI SOURCE MODULE

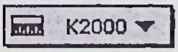


Figure 2.2: MIDI Source Module

As its name implies, a MIDI Source module represents a source of MIDI data. Use the MIDI Source module to choose which device's MIDI output you wish to route to other devices. When you first insert a MIDI Source module, a question mark appears. To define a MIDI Source module:

① **Click anywhere to the right of the question mark to open a pop-up source menu.**

This menu contains all sources as defined in the current Studio Setup document. It also contains any Virtual Controllers that are defined in the current patch document (Virtual Controllers are discussed in Chapter 7).

② **Choose a source from the pop-up menu to define the MIDI Source module.**

The Studio 4 or Studio 5 can also be a source of MIDI data. Timing information (MTC, DTL, DTLe), footswitches (FS1, FS2), and foot controller data (FC1) are sent. Also, the interface is a note source when Audio In is enabled and in use. Select the interface as the MIDI source if you wish to use timing data, footswitches, the foot controller, or Audio Input in a Studio Patch.

You can change the source assigned to a MIDI Source Module at any time by clicking the name and choosing a new source from the pop-up menu.

Referencing Non-Current Studio Setup Documents

MIDI Source modules reference the devices in the current Studio Setup document. If the device name in a MIDI Source module is italicized, then the patch document being edited probably references a non-current Studio Setup document. You can re-define the module by:

- making the old Studio Setup document current, or
- selecting a different device for every module that is italicized.

If you want to use the current patch document with your new current Studio Setup document, copy the devices from your original Studio Setup document into your current Studio Setup document, or just rename the devices in the new Studio Setup to match the old ones.

MIDI DESTINATION MODULE

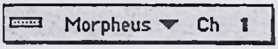


Figure 2.3: MIDI Destination Module

A MIDI Destination module represents the device (or virtual destination) that is the final recipient of MIDI data. When you first insert a MIDI Destination module, a question mark appears. To define a MIDI destination:

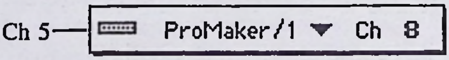
- Click anywhere to the right of the question mark to open a pop-up destination menu. This menu contains all destinations as defined in the current

Studio Setup document. It also contains any Virtual Instruments that are defined in the current patch document (Virtual Instruments are discussed in Chapter 7).

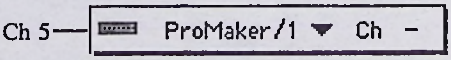
- Choose a device or virtual destination from the pop-up menu to define the MIDI Destination module.

You can change the device or virtual destination assigned to a MIDI Destination Module at any time by clicking the name and choosing a new destination from the pop-up menu.

Use the MIDI Destination module's channel numerical to channelize MIDI data. Set it to a value of 1-16 to channelize the incoming MIDI data. Set it to dash ("-") if you do not want to change the incoming MIDI channel number. Figure 6-4 illustrates use of the MIDI channel numerical.



Ch 5 input gets changed to Ch 8. The ProMaker/1 plays the voice assigned to MIDI Ch 8.



Ch 5 input does not get changed. The ProMaker/1 plays the voice assigned to MIDI Ch 5.

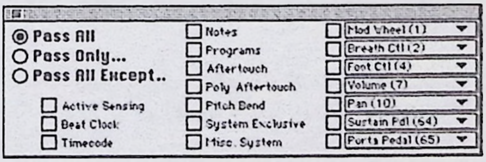
Figure 2.4: Destination Module Channelizing Example

MIDI Destination modules, like MIDI Source modules, reference the current Studio Setup document. If device names are italicized, the MIDI Destination module probably references a non-current Studio Setup document. See "Referencing Non-Current Studio Setup Documents" on page 14. for more details.

EVENT TYPE FILTER MODULE

Figure 2.5: Event Type Filter Module

An Event Type Filter module removes various types of MIDI events from the data stream. Double-click its icon after inserting it into the connection. You'll see a dialog box similar to the one shown in Figure 2.6.



● Pass All
○ Pass Only...
○ Pass All Except..

☐ Active Sensing
☐ Beat Clock
☐ Timecode

☐ Notes
☐ Programs
☐ Aftertouch
☐ Poly Aftertouch
☐ Pitch Bend
☐ System Exclusive
☐ Misc. System

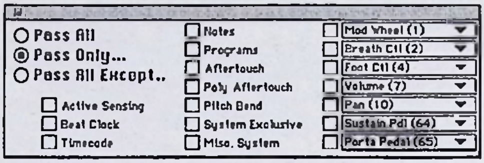
☐ Mod Wheel (1)
☐ Breath Ctl (2)
☐ Foot Ctl (4)
☐ Volume (7)
☐ Pan (10)
☐ Sustain Pdl (64)
☐ Porta Pedal (65)

Figure 2.6: Event Type Filter Edit Window

The three radio buttons control whether the filter will **Pass All** events (useful for temporarily disabling the filter), **Pass Only** certain types of events, or **Pass All Except** certain events.

Checked boxes remove those event types when **Pass All Except** is chosen. Checked boxes pass those event types through the filter when **Pass Only** is chosen.

In the following example, only notes are passed through the Event Type Filter module. All other MIDI events are filtered out.



○ Pass All
● Pass Only...
○ Pass All Except..

☐ Active Sensing
☐ Beat Clock
☐ Timecode

☐ Notes
☐ Programs
☐ Aftertouch
☐ Poly Aftertouch
☐ Pitch Bend
☐ System Exclusive
☐ Misc. System

☐ Mod Wheel (1)
☐ Breath Ctl (2)
☐ Foot Ctl (4)
☐ Volume (7)
☐ Pan (10)
☐ Sustain Pdl (64)
☐ Porta Pedal (65)

Figure 2.7: Passing Only Notes Through Filter

You can filter up to seven MIDI continuous controls; choose them from the pop-up menus next to the rightmost column of check boxes.

Most message types are self-explanatory. "Beat Clock" includes Song Position Pointer, Song Select, Timing Clock, Start, Stop, and Continue messages. "Misc. System" includes Tune Request, System Reset, and undefined MIDI status bytes 0xF4, 0xF5, 0xF9, and 0xFD.

TIP: The Event Type Filter module is useful for "thinning" the MIDI data stream prior to sending it to a Splitter module (discussed in the following section). A Splitter module can and often does increase the amount of MIDI data, so it's desirable to remove unwanted data before it's duplicated by a Splitter module.

NOTE: DTL, DTLe, Full Messages and User Bits messages will not pass properly through an Event Type Filter unless System Exclusive events are allowed to pass. Also, DTL and DTLe will not pass through unless clock is also passed.

Event Type Filter Module Example

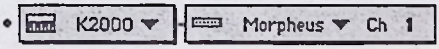
Assume that you want your K2000 keyboard to play the Morpheus, but that you don't want the Morpheus to respond to polyphonic aftertouch data.

① **Choose Patch>New Patch.**

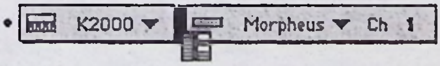
② **Double-click the new patch's selector dot to open a blank patch editing window.**

③ **Click the MIDI Source module, then move the cursor into the patch editing area and click. You will create an undefined connection.**

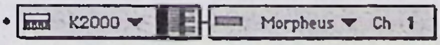
④ **Choose the K2000 from the pop-up MIDI source menu and the Morpheus from the pop-up MIDI destination menu (these synthesizers may not be in your Studio Setup document, but are presented here as an example).**



⑤ **Click the Event Type Filter module, and move the cursor between the Source and Destination modules. The area becomes highlighted.**



⑥ **Click the mouse to insert the Event Type Filter module.**



⑦ **Double-click the Event Type Filter module to open its edit window.**

⑧ **Choose Pass All Except and check the Poly Aftertouch box to pass all MIDI events except polyphonic**

aftertouch through to the Morpheus sound module.

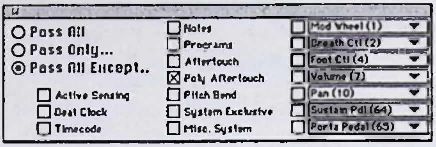

○ Pass All
○ Pass Only...
● Pass All Except..
☐ Active Sensing
☐ Beat Clock
☐ Timecode
☐ Notes
☐ Programs
☐ Aftertouch
☒ Poly Aftertouch
☐ Pitch Bend
☐ System Exclusive
☐ Misc. System
☐ Mod Wheel (1)
☐ Breath Ctl (2)
☐ Foot Ctl (4)
☐ Volume (7)
☐ Pan (10)
☐ Sustain Pdl (64)
☐ Porta Pedal (65)

Figure 2.8: Filtering Poly Aftertouch

⑨ **Choose File>Save.**

In the future, when you need to play the Morpheus with polyphonic aftertouch data filtered out, you can select this patch.

SPLITTER MODULES

Figure 2.9: Splitter Module Group

A Splitter module takes a single MIDI source and sends it to multiple destinations. There are four kinds of Splitter modules:

- Simple
- Channel
- Note Range
- Velocity

If any Splitter module routes two or more of its outputs to the same channel of the same device, Studio Patches ensures that the destination device and channel does not receive duplicate MIDI data. If, however, you modify one of the splitter output's MIDI data streams, then the destination device and channel receives both the original MIDI stream and the modified events generated by the second MIDI stream from the splitter.

For example, if you simply split a MIDI data stream into two separate streams then route both streams to the same device and channel, Studio Patches ensures that only one stream reaches the destination. But, if you modify one of the streams (such as transposing a stream up an octave) before routing both streams to the same device and channel, Studio Patches allows both MIDI data streams to reach their destination since they are no longer identical. In this example, notes and polyphonic aftertouch events are both affected by transposition and are both sent to the destination; other events (such as sustain pedal or pitch bend) are sent to the destination only once.

If, for any reason, you wish to send duplicate MIDI events to the same channel of the same device, split the controller into two Virtual Controllers and route them separately. Virtual Controllers are discussed in Chapter 7.

This discussion on Splitter modules will first cover common Splitter editing techniques and then describe each of the four Splitter modules in detail.

Adding Outputs to a Splitter Module

When you first insert a Splitter module into a connection, it doesn't perform as a splitter since it has only one output. However, you may still use it to limit the range of notes, velocities or channels sent to a single device.

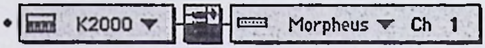


Figure 2.10: Note Range Splitter With One Output

To create a second output from the Splitter module:

① **Click any module icon in the palette (except the MIDI Source module icon).**

② **Position the cursor below the Splitter module to highlight the area.**

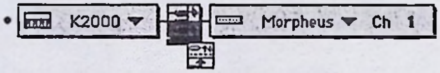


Figure 2.11: Adding Additional Splitter Outputs

③ **Click the mouse and the connection looks as shown in Figure 6-11.**

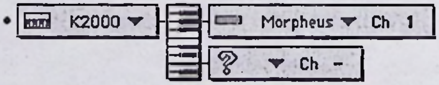


Figure 2.12: Splitter With Two Outputs

④ **Choose a device for the second destination module.**

You can add as many outputs as necessary underneath the splitter using the same techniques.

Editing Splitter Modules

You can edit Channel, Note Range, and Velocity Splitter modules. You cannot edit Simple Splitter modules.

① **Double-click anywhere within an editable Splitter module to open its editing window.**

Splitter module editing windows contain one line for each output of the splitter. In Figure 6-12, the top keyboard edits the note range of the ProMaker/1 (the top MIDI Destination module) and the bottom keyboard edits the note range of the Vectorific (the bottom MIDI Destination module).

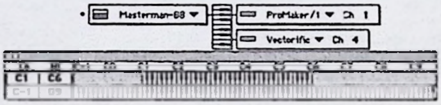
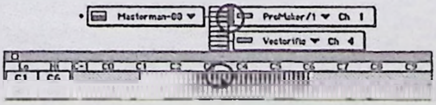


Figure 2.13: Note Range Splitter Module

② **Move the cursor over an editing line to highlight that splitter output in the connection.**

Notice, in Figure 2.13, that the top splitter output is highlighted when the cursor is over the top editing line, and that the bottom splitter output is highlighted when the cursor is over the bottom line. This makes it easy, when an input is split into many outputs, to keep track of which splitter output you are editing.



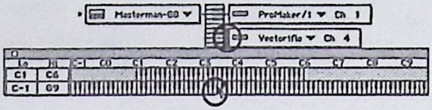


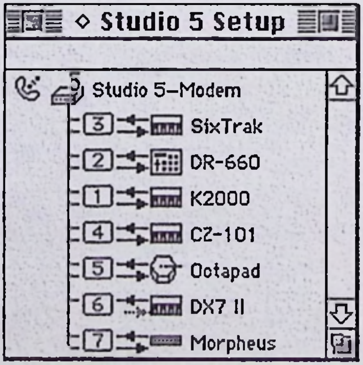
Figure 2.14: Highlighting a Splitter Segment

NOTE: *A splitter module must have something connected to its output in order to be edited.*

Editing Note Range and Velocity Splitters with MIDI

You can use a MIDI controller to set note numbers in a Note Range Splitter module or to set velocity levels in a Velocity Splitter module.

Assume, for example, that your Studio Setup document looks like the one shown in Figure 6-14, and that you want to edit Note Range Splitter modules and Velocity Splitter modules using either your K2000 keyboard or your Octapad.

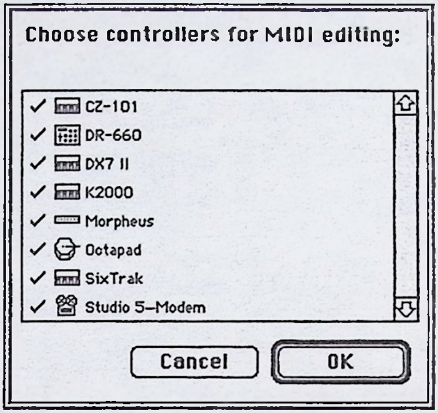


◇ Studio 5 Setup

Studio 5–Modem
3 SixTrak
2 DR-660
1 K2000
4 CZ-101
5 Octapad
6 DX7 II
7 Morpheus

Figure 2.15: Sample Studio Setup Document

① Choose Windows>**Controllers for MIDI Editing** to produce a dialog containing a list of all devices defined in your current Studio Setup document.

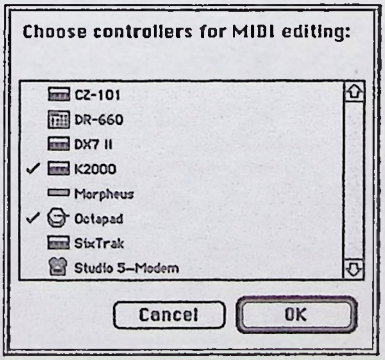


Choose controllers for MIDI editing:

- ✓ CZ-101
- ✓ DR-660
- ✓ DX7 II
- ✓ K2000
- ✓ Morpheus
- ✓ Octapad
- ✓ SixTrak
- ✓ Studio 5–Modem

Figure 2.16: MIDI Entry Controller Selection Window

② Select the K2000 and Octapad by clicking them. Checked devices are enabled for MIDI entry of notes and velocities. Unchecked devices are not enabled.



Choose controllers for MIDI editing:

- CZ-101
- DR-660
- DX7 II
- ✓ K2000
- Morpheus
- ✓ Octapad
- SixTrak
- Studio 5–Modem

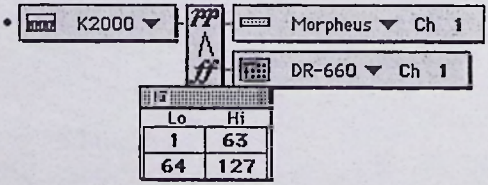
Figure 2.17: Selecting Controllers for MIDI Entry of Notes and Velocities

You can now use either the K2000 or Octapad to enter note and velocity data into patch editing modules. Simply highlight a note or velocity numerical and hit a note on either controller—this will set the numerical to the MIDI value generated by the master controller.

Gang Editing Note Range and Velocity Splitters

In both the Note Range and Velocity splitter modules, you can edit multiple outputs simultaneously by holding down the shift key while you make changes to one of the outputs. This is called "gang editing". Gang editing affects those outputs that are either equal to or within a value of "1" from the edited output. This makes gang editing particularly useful for editing one splitter output's high limit by the same amount as the other output's low limit.

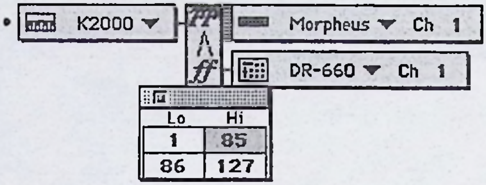
Suppose, for example, that you have designed the patch shown in Figure 2.18, but that the velocity split point (set at 63/64) is too low. You want to raise the split point to 85/86.



Lo	Hi
1	63
64	127

Figure 2.18: Velocity Split Patch

Shift-click the top output's Hi velocity value and drag the mouse up until the numerical is set for 85. The bottom output's Lo velocity value changes automatically to a value of 86.



Lo	Hi
1	85
86	127

Figure 2.19: Gang Editing Velocity Split Points

Simple Splitter Module

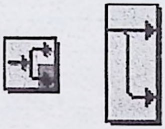


Figure 2.20: Simple Splitter Module

A Simple Splitter module sends one MIDI source to multiple destinations. A Simple Splitter module has no edit window.

Channel Splitter Module

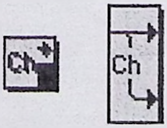
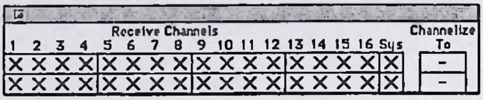


Figure 2.21: Channel Splitter Module

The Channel Splitter module splits the MIDI data by channel and, if desired, changes each output's MIDI channel. To open an edit window, insert a Channel Splitter module into a connection, then double-click the module.



Receive Channels																	Channelize To
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Sys	
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	–

Figure 2.22: Channel Splitter Edit Window

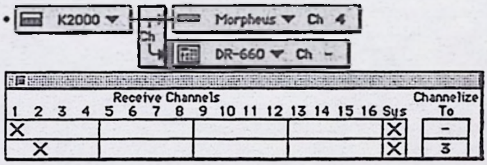
Each row in the window controls which channels in the MIDI data stream are passed through to the corresponding splitter output. A checked channel passes data, an unchecked channel doesn't. Sys includes all MIDI System messages—system exclusive, MIDI Time Code, song select, tune request, clock, and system reset. The **Channelize To** numerical lets you change all the events passed to an output to the same MIDI channel. The "–" character means that the data is passed through without having its channel changed.

Read through the following examples to gain a better understanding of the Channel Splitter module.

Channel Splitter Module Examples

Follow the signal path through these next two connections to understand Channel Splitter modules and channelizing.

Example 1: Look at Figure 2.23. Notice that the top of the Channel Splitter receives data on MIDI Channel 1. It is not channelized, so it exits the Splitter module on MIDI Channel 1. The top MIDI Destination module channelizes the MIDI data from Channel 1 to Channel 4. This means that the Morpheus plays the voice assigned to MIDI Channel 4. The bottom half of the Channel Splitter module receives data on MIDI Channel 2 and channelizes it to MIDI Channel 3. The DR–660 MIDI Destination module is set to Channel "-", meaning that data received at its input is not channelized. Therefore, the DR-660 plays the voice assigned to MIDI Channel 3.



Receive Channels																	Channelize To
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Sys	
X																X	–
	X															X	3

Figure 2.23: First Channel Splitter Example

Example 2: Look at Figure 2.24. The top half of the connection hasn't changed, but the bottom half is different. Notice that data is still received by the Channel Splitter module on Channel 2, channelized to MIDI Channel 3, and sent out the Splitter module. The DR-660 MIDI Destination module is now set to MIDI Channel 1.

This means that data entering the MIDI Destination module is channelized *again* to MIDI Channel 1, and that the DR-660 plays the voice assigned to MIDI Channel 1.

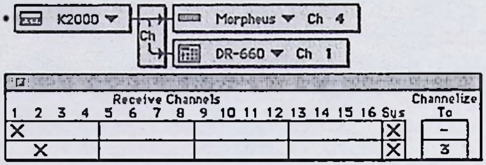


Figure 2.24: Second Channel Splitter Example

Note Range Splitter Module

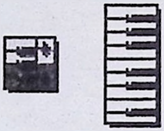


Figure 2.25: Note Range Splitter Module

The Note Range Splitter module limits the range of MIDI notes (and polyphonic aftertouch events) routed to each output of the splitter. To open its edit window, insert a Note Range Splitter module into a connection, then double-click the module.

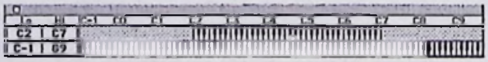


Figure 2.26: Note Range Splitter Edit Window

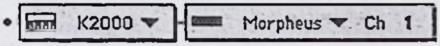
The edit window contains one line for each of the Splitter's outputs. You can edit each output's note range with the numericals, the graphic keyboard, or MIDI entry. When you click the lower half of the keyboard, all notes below the click point will disappear, and the numericals will indicate the new note range. Similarly, clicking high on the keyboard will remove notes above the click point. Clicking and dragging changes the note range as you move the mouse back and forth across the keyboard. You can change split points by "gang editing" as discussed earlier.

MIDI events other than notes and polyphonic aftertouch pass through to all outputs of the splitter.

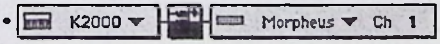
Note Range Splitter Module Example

Assume, for example, that you want to split your K2000 keyboard to produce a right-hand melody sound on Channel 1 of the Morpheus and a left-hand bass sound on Channel 1 of the Wavestation.

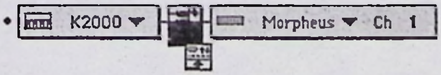
① **Create a new patch and define your Source and Destination modules as discussed previously.**



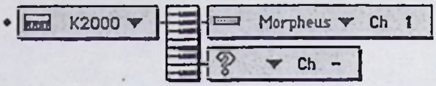
② **Add a Note Range Splitter module between the MIDI Source and MIDI Destination modules.**



③ **Click the MIDI Destination module icon and move the cursor below the Note Range Splitter module. The area below the Splitter module becomes highlighted.**

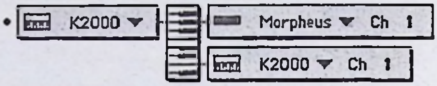


④ **Click the mouse to add a new, undefined MIDI Destination module.**

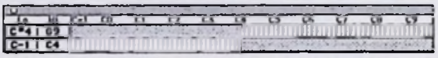


⑤ **Select the Vectorific from the MIDI Destination module's pop-up device menu.**

⑥ **Select MIDI Channel 1 in the MIDI Destination module's Channel numerical.**



⑦ **Double-click the Note Range Splitter module and enter note ranges for each Splitter module output.**



Lo	Hi
C#4	G9
C-1	C4

As shown here, all notes from C#4 to G9 will be played by the upper MIDI Destination module (the Morpheus) and all notes from C-1 to C4 will be played by the bottom MIDI Destination module (the Wavestation).

Velocity Splitter Module

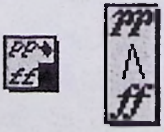
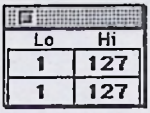


Figure 2.27: Velocity Splitter Module

The Velocity Splitter module allows notes with only specific ranges of note-on key velocities to pass through to each output of the Splitter module. To open an editing window, insert a Velocity Splitter module into a connection, then double-click the module.



Lo	Hi
1	127
1	127

Figure 2.28: Velocity Splitter Edit Window

Like the Channel and Note Range Splitter modules, each row corresponds to one output of the splitter. You can enter velocity values with either numerical or MIDI input. You can "gang edit" multiple velocity values as discussed previously. Only notes with velocities within the specified range will pass through to the Splitter module's output.

MIDI events other than notes are passed through to all outputs of the splitter.

NOTE: *Some notes may be cut off early when transposing the outputs of a velocity splitter and playing chords.*

TRANSPOSER MODULE

Figure 2.29: Transposer Module

Use the Transposer module to transpose note and polyphonic aftertouch events. You can edit the Transposer module with either a simple edit window or a map edit window.

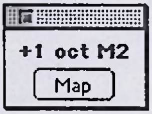
Opening and Using a Simple Transposer Edit Window

To open a simple Transposer edit window:

① **Insert a Transposer module into a connection.**

② **Double-click the module.**

A simple Transposer edit window opens as shown in Figure 2.30.



+1 oct M2

Figure 2.30: Simple Transposer Edit Window

The transposition interval is expressed musically, not as a number of half-steps. If you prefer thinking in terms of half-steps, type the number of half steps into the numerical, then hit the Return or Enter keys. Negative values transpose downward and positive values transpose upward. The Transposer module in Figure 2.30 transposes the MIDI note values up 1 octave plus a Major 2nd (14 half-steps).

Figure 6-30 shows the relationship between intervals and half-step values.

m2	minor second	1 half-step
M2	major second	2 half-steps
m3	minor third	3 half-steps
M3	major third	4 half-steps
P4	perfect fourth	5 half-steps
#4	sharp fourth (tritone)	6 half-steps
P5	perfect fifth	7 half-steps
m6	minor sixth	8 half-steps
M6	major sixth	9 half-seps
m7	minor seventh	10 half-steps
M7	major seventh	11 half steps
+1 oct	up one octave	12 half steps

Figure 2.31: Relation of Intervals to Half-Steps

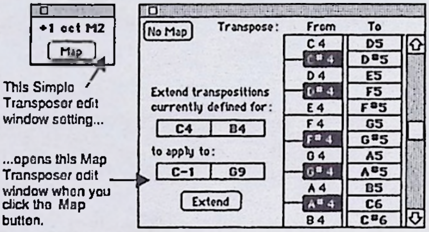
NOTE: Transposer modules change MIDI note numbers. They do not actually alter the internal tuning of your synthesizers. The musical intervals expressed in the Transposer module are based on standard Equal Temperament. Actual tuning amounts will change if you use alternate synthesizer tuning scales.

Opening and Using a Map Transposer Edit Window

To open a map Transposer edit window:

① **Click the Map button in the simple Transposer edit window.**

A map Transposer edit window opens to show the current conditions of the simple Transposer edit window (as seen in Figure 2.32).



Transpose:

From	To
C 4	D5
C# 4	D#5
D 4	E5
D# 4	F5
E 4	F#5
F 4	G5
F# 4	G#5
G 4	A5
G# 4	A#5
A 4	B5
A# 4	C6
B 4	C#6

Extend transpositions currently defined for: C4 B4

to apply to: C-1 G9

This Simple Transposer edit window setting...

...opens this Map Transposer edit window when you click the Map button.

Figure 2.32: Opening the Map Transposer Edit Window

The scrolling keyboard along the right edge of the window lets you map any MIDI note to any other MIDI note. Use the **To** numerical to transpose each individual note (you can set each numerical using MIDI entry—See "Module Editing Basics" on page 13..

The controls in the left half of the window allow you to duplicate the transpositions defined in one note range for any other note range. For example, the default setting lets you create a transposition map for the twelve notes of one octave, then duplicate these transpositions for all octaves. Use the four numericals to set the two ranges, then click the **Extend** button to perform the extension.

NOTE: You may want to define some commonly used transposition maps as either virtual controllers or virtual instruments, and then use the virtual controller or instrument instead of a map in your Studio Patches. Virtual Controllers and Virtual Instruments are discussed in Chapter 7.

Maps use a relatively large amount of memory, so if you find yourself using the same map in multiple places in the same patch document, you'll use less memory by putting maps into virtual controllers or virtual instruments.

Choosing Between a Simple or Map Transposition

If you click the map edit window's close box, the map edit window closes and the Transposer module will use that map to transpose MIDI data. The map edit window opens the next time you double-click that Transposer module.

If you click the **No Map** button, you'll delete your custom map, close the map edit window, and re-open the simple edit window. The Transposer module will use the settings in the simple edit window to transpose MIDI data.

MODIFIER MODULES

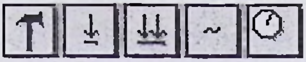


Figure 2.33: Modifier Module Group

Use Modifier modules to alter note-on velocities, mono aftertouch, poly aftertouch, pitch bend and MIDI control values. Each Modifier module uses either a simple Modifier edit window or a map Modifier edit window to modify MIDI data.

Opening and Using a Simple Modifier Edit Window

To open a simple Modifier module edit window:

① **Insert a Modifier module into a connection.**

② **Double-click the new module.**

A simple Modifier edit window opens as shown in Figure 2.34.

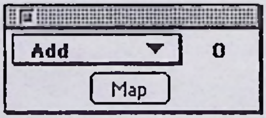


Figure 2.34: Typical Simple Modifier Edit Window

Each Modifier module's simple edit window contains a pop-up menu of modifiers. The choices are **Add**, **Scale**, **Invert**, **Max Limit**, **Min Limit**, **Set To**, and **Filter Out**. The modification amount is set by the numerical to the right.

- **Add**

  Add the specified number to each MIDI data value. Positive and negative values may be used.
- **Scale**

  Scale the value by the specified percentage: 100% is unchanged, 50% halves each value, 199% (the maximum) nearly doubles each value (you cannot have values greater than 127 or less than 0, however).
- **Invert**

  Changes 127->0, 126->1, 125->2... 1->126, and 0->127 except in the case of velocity where 0 (a note off) is left unchanged.
- **Max Limit**

  Reduces all values higher than the specified value down to the limit you enter.
- **Min Limit**

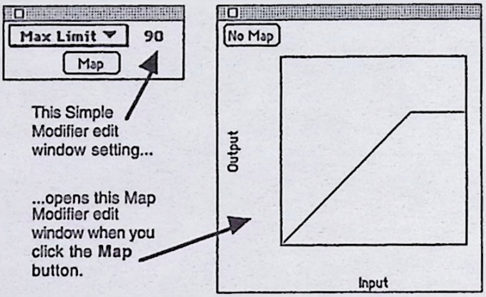
  Increases all values lower than the specified value up to the limit you enter.
- **Set To**

  Changes all values to the one you enter.
- **Filter Out**

  Removes the event type completely (not allowed for velocity).

Opening and Using a Map Modifier Edit Window

To open a Modifier module's map edit window, click the Map button in the Simple Modifier edit window. A map Modifier edit window opens to show the current conditions of the Simple Modifier edit window (as seen in Figure 2.35).



This Simple Modifier edit window setting...

...opens this Map Modifier edit window when you click the **Map** button.

Figure 2.35: Opening a Map Modifier Edit Window

Click and drag inside the mapping area to create a new modifier map. The current cursor location's input value is shown below the map and its re-mapped value is shown to the left. MIDI data entering the Modifier module gets modified according to the curve.

Figure 2.36 illustrates a simple S-curve map—low and high input values result in very little output change, but middle input values create great changes in output values. Notice, as an example, that a value of 76 entering the Modifier module gets remapped to 95 before leaving the module.

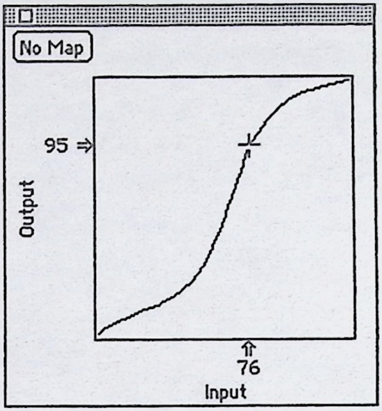
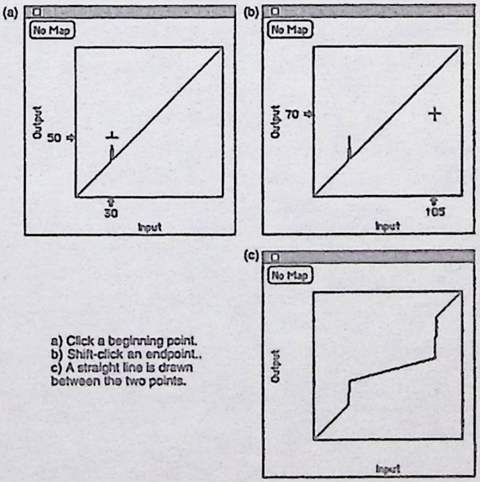


Figure 2.36: Simple S-Curve Modifier Map

To draw a straight line between two points, click at one end point, then shift-click at the other end point (see Figure 2.37).



a) Click a beginning point.
b) Shift-click an endpoint..
c) A straight line is drawn between the two points.

Figure 2.37: Drawing Straight Lines

NOTE: *You may want to define some commonly used modifier maps as either virtual controllers or virtual instruments, and then use the virtual controller or instrument instead of a map in your Studio Patches. Virtual Controllers and Virtual Instruments are discussed in Chapter 7.*

Maps use a relatively large amount of memory, so if you find yourself using the same map in multiple places in the same patch document, you'll use less memory by putting maps into virtual controllers or virtual instruments.

Choosing Between Simple and Map Modifiers

If you click the map edit window's close box, the map edit window closes and the Modifier module will use that map to modify MIDI data. The map edit window opens the next time you double-click that Modifier module.

If you click the **No Map** button, you'll delete your custom curve, close the map edit window, and re-open the simple edit window. The Modifier module will use the simple edit window settings to modify MIDI data.

Velocity Modifier

Double-click the Velocity Modifier module to open its edit window. You can modify velocity values using either the simple or map edit windows. You cannot filter out velocity data, nor can you invert a note-off value of 0 (zero).

Aftertouch Modifier

Double-click the Aftertouch Modifier module to open its edit window. You can modify mono aftertouch values using either the simple or map edit windows.

Poly Aftertouch Modifier

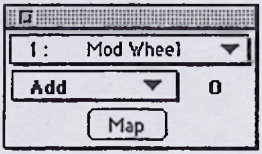
Double-click the Polyphonic Aftertouch Modifier module to open its edit window. You can modify poly aftertouch values using either the simple or map edit windows.

Pitch Bend Modifier

Double-click the Pitch Bend Modifier module to open its edit window. You can modify pitch bend values using either the simple or map edit windows.

Control Value Modifier

Double-click the Control Value Modifier to open its edit window. This window contains an additional pop-up menu for choosing which MIDI continuous control value to modify.



1 : Mod Wheel

Add 0

Figure 2.38: Control Value Modifier Edit Window

The Control Value Modifier module contains a small number in its lower right corner. This indicates the number of the control being modified.

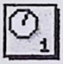
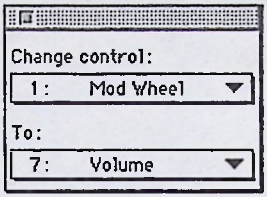


Figure 2.39: Control Number Indicator

CONTROL NUMBER MAPPER MODULE

The Control Number Mapper module changes one type of MIDI control message into another. To open an edit window for the Control Number Mapper module, insert it into a connection, then double-click the module.



Change control:

1 : Mod Wheel

To:

7 : Volume

Figure 2.40: Control Number Mapper Edit Window

The Control Number Mapper Module's edit window contains two pop-up menus. Choose the old control number from the top pop-up menu. Use the bottom pop-up menu to choose the new control number.

Control Number Mapper Module Example

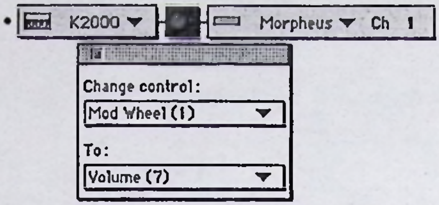
Assume, for example, that you wanted to play your Morpheus from your K2000 keyboard, and that you wanted to control the Morpheus' volume with the K2000 modulation wheel.

① **Create a connection with the K2000 as the MIDI source and the Morpheus as the MIDI destination.**

② **Insert the Control Number Mapper module into the connection, then double-click it to open its edit window.**

③ **Choose "Mod Wheel (1)" from the upper pop-up menu.**

④ Choose "Volume (7)" from the lower pop-up menu.



Change control: Mod Wheel (1)

To: Volume (7)

Figure 2.41: Mapping Mod Wheel to Volume

The K2000 modulation wheel now controls the Morpheus output volume.

CHAPTER 3: Virtual Controllers and Virtual Instruments

Virtual Controllers and Virtual Instruments are extremely powerful features of Studio Patches. Basically, they're enhanced versions of the MIDI devices defined in your current Studio Setup document. Any number of Virtual Controllers and Virtual Instruments can be stored within a patch document.

A Virtual Controller is the output of a MIDI device plus some form of MIDI processing. A Virtual Controller is treated the same as any other MIDI controller defined in your current Studio Setup document, except that it enhances the performance of a MIDI controller by adding MIDI processing. Virtual Controllers have two important uses:

- They are used when common MIDI processing connections need to be used in multiple Studio Patches.
- They are used as sequencer inputs when you need to record a MIDI controller with some processing applied.

Basically, Virtual Controllers are additional sources of MIDI data (just like real MIDI controllers). You create these new sources by combining your real MIDI controllers with MIDI processing.

A Virtual Instrument is some form of MIDI processing routed to one or more MIDI devices. A Virtual Instrument is treated the same as any other MIDI destination defined in your current Studio Setup document, except that it enhances performance by stacking, splitting or layering various devices and adding MIDI processing. Virtual Instruments have two important uses:

- They are used when common MIDI processing connections need to be used in multiple Studio Patches.
- They are used as sequencer destination instruments—allowing the sequenced tracks to play into a MIDI processing stream.

Basically, Virtual Instruments are additional destinations of MIDI data (just like real MIDI sound modules). You create these new destinations by combining your real MIDI sound modules with MIDI processing.

NOTE: *MIDI data can sometimes get very dense when working with Virtual Controllers and Virtual Instruments. Therefore, when designing your patches, it's a good idea to always use Event Type Filter Modules to remove any unnecessary data.*

The following sections discuss Virtual Instruments and Virtual Controllers; why you may wish to use them; how to set them up; and how to access them within Vision.

USING VIRTUAL CONTROLLERS

A Virtual Controller is the output of a MIDI device *plus* some form of MIDI processing. Let's look at an example of a Virtual Controller.

Assume that your keyboard is too sensitive to aftertouch. Pushing just slightly on the keys causes it to send very high aftertouch values. You can design a Virtual Controller that processes the aftertouch data *before* sending it to your sequencer or MIDI devices.

① **Click the Virtual Controllers button or choose Edit Virtual Controllers from the Patch menu to open a Virtual Controllers editing window.**

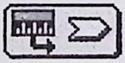


Figure 3.1: Virtual Controllers Button

You'll see that the Virtual Controllers editing window looks very similar to the patch editing window. Use the Virtual Controllers editing window to create and store as many Virtual Controllers as the Studio 5's memory will allow.

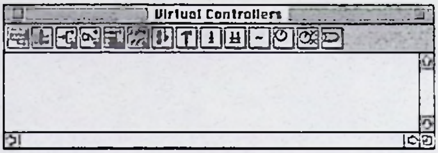
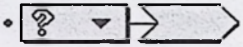


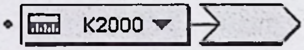
Figure 3.2: Virtual Controllers Edit Window

② **Click the MIDI Source module icon. The cursor will turn into the MIDI Source icon. Click anywhere in the space below the Module Palette to create an undefined connection.**

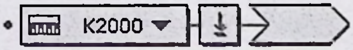
Notice that this connection looks very similar to an undefined patch connection; the only difference is that the MIDI Destination module is replaced by a Virtual Controller module.



③ **Choose your master keyboard from the MIDI Source module's pop-up menu.**

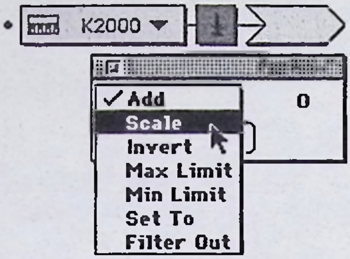


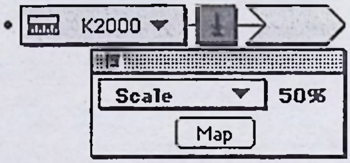
④ **Insert a Mono Aftertouch Modifier module between the MIDI Source module and the Virtual Controller module.**



⑤ **Double-click the Mono Aftertouch Modifier module to open its editing window.**

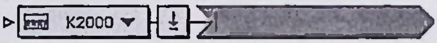
⑥ **Choose Scale from the Modifier module's pop-up window and enter a value of 50% into the Modifier module's numerical.**



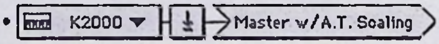


This will scale the Mono Aftertouch output by 50%, resulting in the desired decrease in Mono Aftertouch sensitivity.

⑦ **Click the Virtual Controller Module. Its border will become thick and it will contain a flashing text-insertion cursor.**



⑧ **Type a suitable name for your new Virtual Controller.**



⑨ **Close the Virtual Controller editing window.**

If you open a patch in the patch editing window, you'll see that "Master w/A.T. Scaling" has been added to your list of possible MIDI sources. Now, instead of using the K2000 as a controller, you can use the improved Virtual Controller as your MIDI source.

The previous example provided a graphic illustration of the Virtual Controller definition—Virtual Controllers are the output of a MIDI device *plus* some form of MIDI processing.

Virtual Controllers are edited similarly to patches, except that instead of MIDI Destination Modules, there are Virtual Controller Modules.

All of the modules and connections to the left of the Virtual Controller Module are used to define the output of that Virtual Controller. There may be any number of Virtual Controllers for each real controller.

Virtual Controllers appear in the pop-up MIDI source menus when you edit a patch. If you choose a Virtual Controller, it has the same appearance in the patch editing window as in the Virtual Controller editing window, except that you can't edit its name.

Efficient Use of Virtual Controllers

There are two kinds of Virtual Controller connections:

- Those that do not "multiply" MIDI data.

  In this type of a connection, no one MIDI event from a source reaches more than one Virtual Controller. You make non-multiplying Virtual Controller connections either by avoiding multi-output splitter modules or by extensive use of filtering. An example of two different non-multiplying connections is shown in Figure 3.3.

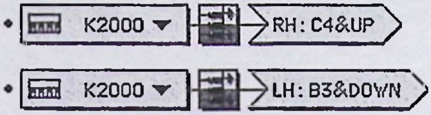


Figure 3.3: Non-Multiplying Virtual Controller Connections

- Those that do "multiply" MIDI data.

  In this type of connection, a single MIDI event from a source reaches more than one Virtual Controller. Connections that use unfiltered, multi-output splitter modules multiply MIDI data by sending duplicate data to numerous Virtual Controllers. An example of a multiplying connection is shown in Figure 3.4.

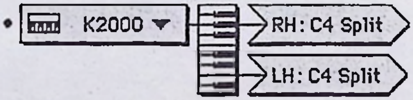


Figure 3.4: Multiplying Virtual Controller Connection

The connection shown in Figure 3.4 doubles all MIDI events (pitch bend, controls, mono aftertouch, etc.) except for notes and polyphonic aftertouch events.

When you design patches using Virtual Controllers created in a "multiplying" connection, avoid using the Virtual Controllers independently. Either use all of the Virtual Controllers created in a multiplying connection or don't use any at all.

If you don't use all of a multiple connection's Virtual Controllers, you will waste microprocessor power since you'll send MIDI data to Virtual Controllers that aren't in your patch.

For example, if you wanted to create a patch where your left hand controls one module and your right hand controls another, you could use the two Virtual Controllers shown in Figure 7-4. The patch would look as shown in Figure 7-5.

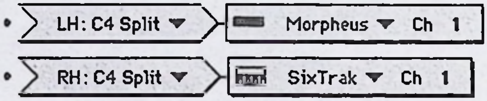


Figure 3.5: Patch Using Virtual Controllers from Multiplying Connection

If, however, you wanted to create a patch where only your left hand controlled a module, you should use the "LH: B3&DOWN" Virtual Controller shown in Figure 7-3. The patch would look as shown in Figure 7-6.

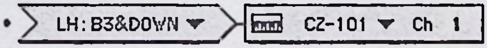


Figure 3.6: Patch Using Virtual Controllers from Non-Multiplying Connection

If, instead of using the "LH: B3&DOWN" Virtual Controller in the patch, you used the "LH: C4 Split" Virtual Controller shown in Figure 7-4, you would waste processing power since all MIDI events generated by the K2000 (other than notes and poly aftertouch) are sent to both the "LH: C4 Split" and "RH: C4 Split" Virtual

Controllers. Since this patch doesn't use the "RH: C4 Split" Virtual Controller, this would be an inefficient use of Virtual Controllers and your interface's microprocessor.

Using Virtual Controllers with Vision

OMS applications such as Vision and Studio Vision (versions 1.3 or later) treat Virtual Controllers as they would any other MIDI input device.

Let's look at an example showing how to use Virtual Controllers with Vision. Assume that your Studio Setup document looks like Figure 3.7, and that you have defined a Virtual Controller like the one shown in Figure 3.8.

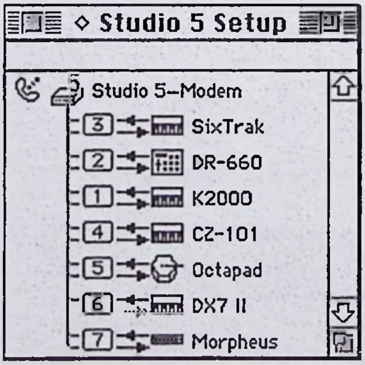


Figure 3.7: Studio Setup Document Example

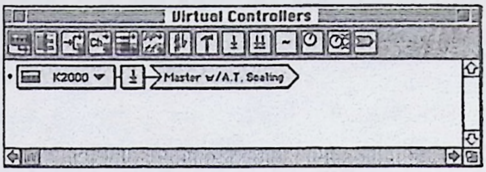


Figure 3.8: Virtual Controller Example

① **Launch Vision.**

② **Choose Enable Input Devices from Vision's Setups menu.**

You'll see a dialog box listing all possible MIDI Input devices, including any Virtual Controllers, as defined by the current Studio Patch document.

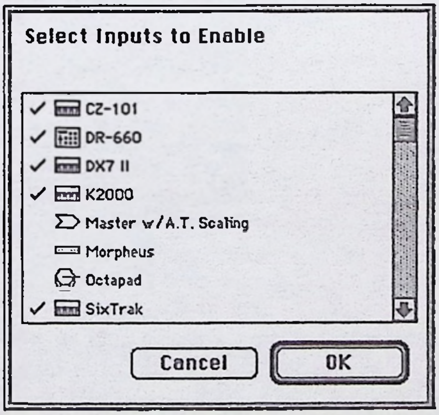
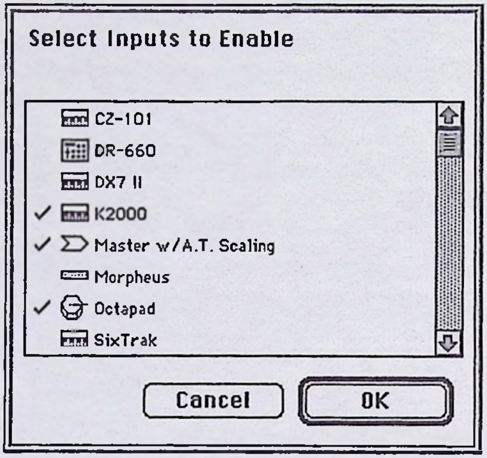


Figure 3.9: Vision's "Enable Input Device" Dialog Box

Notice, in this example, that the Virtual Controller named "Master w/A.T. Scaling" is available as a MIDI input source. You enable input devices by clicking them. In the following example, "Master w/A.T. Scaling" is checked and, therefore, is enabled as an input device.



Select Inputs to Enable

CZ-101
DR-660
DX7 II
✓ K2000
✓ Master w/A.T. Scaling
Morpheus
✓ Octapad
SixTrak

Figure 3.10: Enabling a Virtual Controller in Vision

By using the specially designed "Master w/A.T. Scaling" Virtual Controller as an input device, you can record data with satisfactory aftertouch values directly into Vision.

NOTE: *Since Virtual Controllers use real MIDI input devices, it's possible to accidentally enable an input device twice. For example, if you enable both "K2000" and "Master w/A./T. Scaling", you will get two notes for every one you play. For this reason, make sure that you only enable one input for each real, physical device.*

VIRTUAL INSTRUMENTS

A Virtual Instrument is made up of one or more MIDI destinations *plus* some form of MIDI processing. Virtual Instruments are basically the opposite of Virtual Controllers. Let's look at an example of a Virtual Instrument.

Assume that it's common for you to "stack" instruments together to get a really big MIDI sound—particularly your K2000 and Morpheus sound modules playing on MIDI Channel 2. Using Virtual Instruments, you can create that stack and always have it available as a MIDI destination.

① **Click the Virtual Instruments button in the patch document window, or choose Edit Virtual Instruments from the Patch menu to open a Virtual Instruments editing window.**

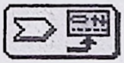


Figure 3.11: Virtual Instruments Button

You'll see that the Virtual Instruments editing window looks very similar to the patch editing window. Use the Virtual Instruments editing window to create and store as many Virtual Instruments as memory will allow.

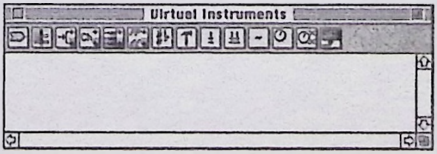


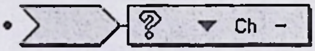
Figure 3.12: Virtual Instruments Edit Window

② **Click the Virtual Instrument module icon.**

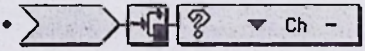
Figure 3.13: Virtual Instrument Module Icon

③ **Click in the blank space below the Module Palette to create an undefined Virtual Instrument connection.**

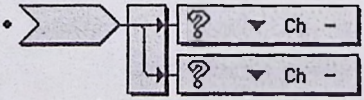
Notice that this connection looks very similar to an undefined patch connection; the only difference is that the MIDI Source module is replaced by a Virtual Instrument module.



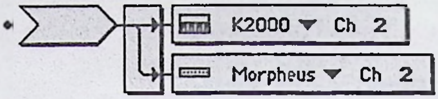
④ **Insert a Simple Splitter module between the Virtual Instrument and the MIDI Destination modules.**



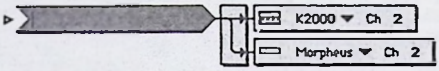
⑤ **Add a second MIDI Destination module by clicking its icon and inserting it below the Simple Splitter module.**



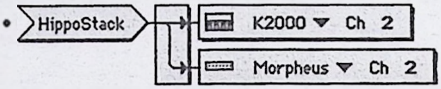
⑥ **Choose the K2000 from the upper MIDI Destination module's pop-up window, and the Morpheus from the lower MIDI Destination module's pop-up window. Set their MIDI channels to Channel 2.**



⑦ **Click the Virtual Instrument module to select it.**



⑧ **Type in the name of your new Virtual Instrument and hit the Enter key.**



⑨ **Close the Virtual Instrument editing window.**

If you open a patch in the patch editing window, you'll see that "HippoStack" has been added to your list of MIDI destinations. Whenever you want to play a stack made up of the K2000 and Morpheus synthesizers on MIDI Channel 2, simply choose this Virtual Instrument as the MIDI Destination.

The previous example provided a graphic illustration of the Virtual Instrument definition—Virtual Instruments are made up of one or more MIDI destinations *plus* some form of MIDI processing.

Like Virtual Controllers, Virtual Instruments are edited similarly to patches with only minor exceptions. The Virtual Instrument editing window contains connections from Virtual Instruments to devices.

Instead of MIDI Source modules, there are Virtual Instrument modules:

Virtual Instruments appear in the pop-up MIDI destination menus when you edit a patch. If you choose a Virtual Instrument, it has the same appearance in the patch window as in the Virtual Instrument editing window, except that you can't edit its name.

NOTE: *System Exclusive messages should always be sent directly to the intended device. Sending System Exclusive to a Virtual Instrument containing a Splitter module and different devices thickens the MIDI data stream unnecessarily. Sending System Exclusive to a Virtual Instrument consisting of a Splitter module routed to different channels of the same device will corrupt the data.*

Using Virtual Instruments with Vision

OMS applications such as Vision and Studio Vision (versions 1.3 or later) treat Virtual Instruments as they would any other MIDI destination device.

Let's look at an example showing how to use Virtual Instruments with Vision. Assume that your Studio Setup document looks like Figure 3.14, and that you have defined a Virtual Controller like the one shown in Figure 3.15.

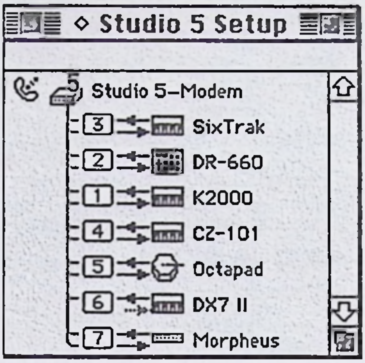


Figure 3.14: Studio Setup Document Example

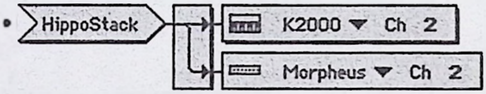


Figure 3.15: Virtual Instrument Example

① **Launch Vision.**

② **Choose Instruments from Vision's Setups menu.**

③ **Choose New Instrument from the Instruments menu.**

A new Instrument will be added to the MIDI Instruments list as shown in Figure 3.16.

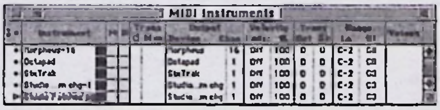


Figure 3.16: Adding an Instrument in Vision

④ **Choose "HippoStack" from the MIDI Output Device pop-up menu.**

This menu displays all MIDI destinations as defined in your current Studio Setup document as well as the Virtual Instruments in your current Studio Patch document.

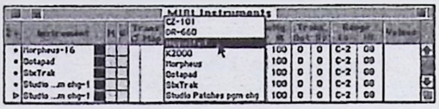


Figure 3.17: Selecting a MIDI Output Device in Vision

⑤ **Choose Channel 2 from the MIDI Output Channel pop-up menu (since "HippoStack" was designed to play on MIDI Channel 2).**

The MIDI Instrument's name becomes "HippoStack-2", indicating that it uses the Virtual Instrument named "HippoStack", and that it is set to receive on MIDI Channel 2. You can keep this name or type another.

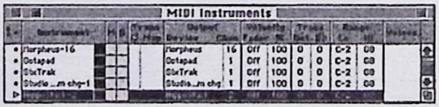


Figure 3.18: Newly Defined Instrument in Vision

⑥ **Click the Thru Instrument setting at the left side of Vision's Control bar (the little keyboard).**

You'll see a pop-up menu of MIDI Instruments as defined in Vision's Instruments window.

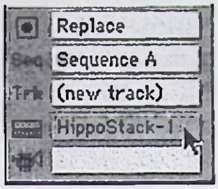


Figure 3.19: Choosing a Virtual Instrument in Vision

⑦ **Choose "HippoStack-2".**

The Thru Instrument will now play the Virtual Instrument named "HippoStack", which is the combined sound of the K2000 and Morpheus sound modules on MIDI Channel 2.

Virtual Instruments can be used to define any number of MIDI Instruments within Vision. You can choose instruments within any of Vision's MIDI Instrument pop-up menus (as found in the Sequence window, List window, Graphic window, and so on).There are two important advantages to using Virtual Instruments with Vision:

- **You wish to play a sequence using an interesting Studio Patch.**

  To do so, simply create a Virtual Instrument consisting of the entire patch connection (except for the source module) and use it as Vision's Thru Instrument. This is detailed in the following section.

- **You wish to have a sound made up of several channels on several devices playing the same part.**

  (This applies to Studio 5s only.) Without Virtual Instruments, you would have the Macintosh send a separate MIDI event to each destination channel on each device. Using a Virtual Instrument allows the Macintosh to send just one MIDI event to the Virtual Instrument, which actually exists inside the interface. This reduces the density of the MIDI data stream, making timing more efficient.

  It also transfers the Macintosh's work load to the interface, which gives the Macintosh more processing time for other events.

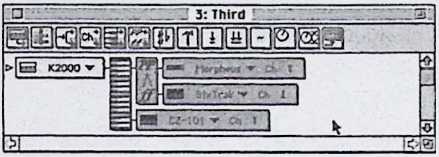
Creating Virtual Instruments from Existing Patches

If you create an interesting Studio Patch and decide you want to use it as a Virtual Instrument in a MIDI sequence, you can simply copy the connection (less the MIDI Source module) from the Patch Editing window and paste it into the Virtual Instruments edit window. To do so:

① **Open the Patch Edit Window for the patch you want to turn into a Virtual Instrument.**

② **Select every part of the connection except the MIDI Source module.**

There are two ways to do this: 1) click the selector dot to the left of the connection (selecting all modules), then ⌘-click the MIDI Source module to deselect it; or 2) drag a rectangle around all the modules except the MIDI Source module.

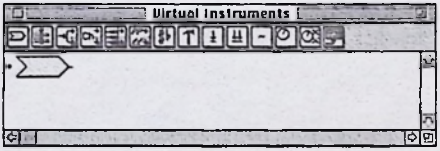


③ **Choose Edit>Copy.**

④ **Open the Virtual Instruments edit window.**

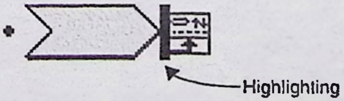
⑤ **Click the Virtual Instrument module icon, then click in the blank space below the Module Palette to create an undefined Virtual Instrument connection.**

⑥ **In the new connection, click the MIDI Destination module to select it and hit the Delete key to remove the MIDI Destination module from the connection.**

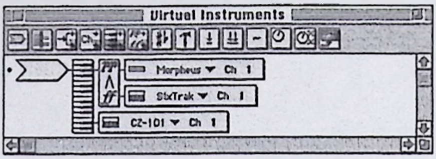


⑦ **Click the MIDI Destination module icon, then move the cursor just to the right of the Virtual Instrument module. Do not click the mouse!**

Notice that the area to the right of the Virtual Instrument module becomes highlighted.



⑧ **Type ⌘ V to paste the contents of the clipboard into the highlighted area.**



Morpheus ▼ Ch 1
SixTrak ▼ Ch 1
CZ-101 ▼ Ch 1

⑨ **Type a name into the Virtual Instrument module and save it.**

You're now ready to use this newly created virtual instrument in your sequencing program.

CHAPTER 4: Program Change Sources

Use the Program Change Sources window to specify various ways to change Studio Patches. You can design Program Change Sources to:

- Change Studio Patches from a MIDI controller.
- Change Studio Patches from a MIDI controller only if an additional MIDI control is activated.
- Step through a pre-determined patch chain using a MIDI controller.

Program Change Sources make it convenient to change Studio Patches from a MIDI controller when you're working within other MIDI applications. You don't have to use the patch document window to change Studio Patches. A patch document can contain any number of Program Change Sources.

OPENING A PROGRAM CHANGE SOURCES EDIT WINDOW

Click the **Program Change Sources** button in the patch document window, or choose **Edit Program Change Sources** from the Patch menu to open the Program Change Sources window.

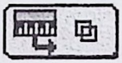


Figure 4.1: Program Change Sources Button

You'll see that the Program Change Sources window looks similar to the patch editing window, except that the module palette is different.

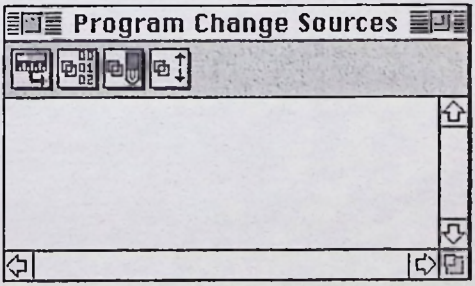


Figure 4.2: Empty Program Change Sources Window

PROGRAM CHANGE SOURCES EDIT WINDOW TERMINOLOGY

Figure 4.3 shows the terminology for the Program Change Sources window.

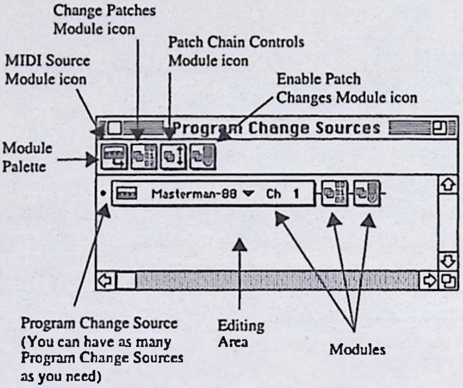

Change Patches Module icon
Patch Chain Controls Module icon
MIDI Source Module icon
Enable Patch Changes Module icon
Program Change Sources
Module Palette
Masterman-88
Ch 1
Program Change Source (You can have as many Program Change Sources as you need)
Editing Area
Modules

Figure 4.3: Anatomy of a Program Change Sources Window

Module placement and editing techniques are similar to those used for the patch editing window. The following sections discuss each module in detail.

MIDI SOURCE MODULE

Figure 4.4: MIDI Source Module

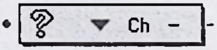
The MIDI Source module in the Program Change Sources window is very similar to the MIDI Source module in the patch editing window. The only difference is that this MIDI Source module contains a MIDI channel numerical; the patch editing window's MIDI Source module does not.

Use this MIDI Source module to specify which device and MIDI channel will control program changes using the other modules to which it's connected.

To insert and define a MIDI Source module:

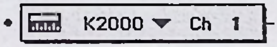
① **Click the MIDI Source module icon. The cursor will change into a MIDI Source module icon.**

② **Click in the blank space below the Module Palette to create an undefined Program Change connection.**



③ **Choose a MIDI source from the MIDI Source module's pop-up menu.**

④ **Use the Channel numerical to set a MIDI transmission channel. A dash ("-") means that the MIDI source data can come from any channel.**



You will not yet be able to change Studio Patches via MIDI, since the MIDI Source module's only purpose is to define the source and channel of MIDI data. See the following sections to learn how to change Studio Patches using several different methods.

CHANGE STUDIO PATCHES

Figure 4.5: Change Studio Patches Module

If you want Studio Patches to receive MIDI program changes from a MIDI device, you must use the Change Studio Patches module. (To change Studio Patches using MIDI program changes sent from an OMS application, send to the "Studio Patches pgm chg" device, described on page 6.)

Place a Change Studio Patches module to the right of the MIDI Source module using techniques discussed previously.

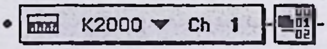
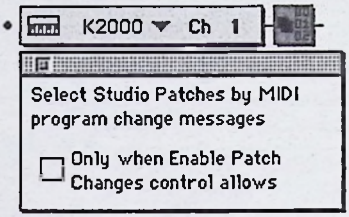


Figure 4.6: Adding a Change Studio Patches Module

In the example shown in Figure 4.6, MIDI program changes transmitted by the K2000 on Channel 1 will change the Studio Patch number.

Editing the Change Studio Patches Module

Double-click the Change Studio Patches module to open its edit window.



Select Studio Patches by MIDI program change messages

☐ Only when Enable Patch Changes control allows

Figure 4.7: Change Studio Patches Module Edit Window

The edit window contains a single check box. When the box is unchecked, Studio Patches recognizes MIDI program changes directly. When the box is checked, the status of an additional MIDI controller (typically a footswitch or button) determines whether Studio Patches recognizes the program change message.

Uncheck the box if you want Studio Patches to *always* change patches when it receives a MIDI program change message. Often, however, it's undesirable to change the Studio Patch every time you send program changes from your master keyboard. If you check the check box, Studio Patches change *only* when an additional MIDI control event is received. This allows you to send program changes to MIDI devices without changing the Studio Patch.

If you check the check box, you'll need to use an Enable Studio Patch Changes module (see the following section).

ENABLE STUDIO PATCH CHANGES MODULE

Figure 4.8: Enable Studio Patch Changes Module

If you checked the check box in the Change Studio Patches module edit window, you must use the Enable Studio Patch Changes module to change Studio Patches.

① **Add a new MIDI Source module to the Program Change Sources window.**

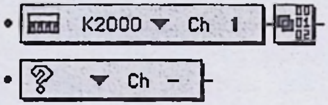


Figure 4.9: Adding a Second Connection

② **Choose a MIDI Source and channel, then place an Enable Studio Patch Changes module to the right of the MIDI Source module.**

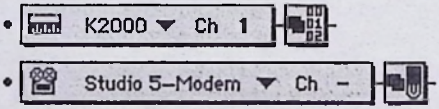
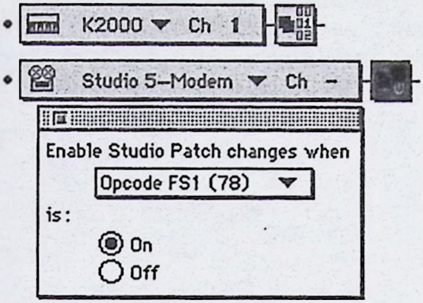


Figure 4.10: Defining Studio Patch Change Enabling Source

Editing the Enable Studio Patch Changes Module

Double-click the Enable Studio Patch Changes module to open its edit window.

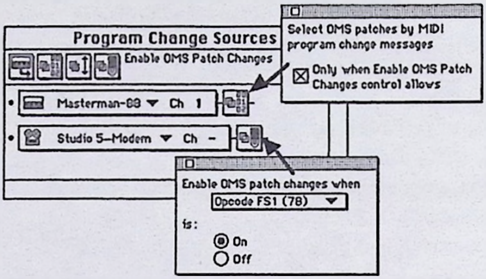


Enable Studio Patch changes when
Opcode FS1 (78)
is:
● On
○ Off

Figure 4.11: Enable Studio Patch Changes Module Edit Window

Use the pop-up menu to specify which MIDI control message enables Studio Patches program changes. You can choose whether the control message needs to be "on" or "off" in order to enable program changes.

In the connection shown in Figure 4.12, the Masterman-88 will change Studio Patches *only* if you send the program change while holding down the Studio 5's Footswitch #1. Program Change messages from the Masterman-88 will not affect Studio Patch selection if the Studio 5 footswitch is not down (on).


Program Change Sources

Enable OMS Patch Changes

Masterman-88 Ch 1

Studio 5—Modem Ch –

Select OMS patches by MIDI program change messages

☒ Only when Enable OMS Patch Changes control allows

Enable OMS patch changes when Opcode FS1 (78)

is:

● On

○ Off

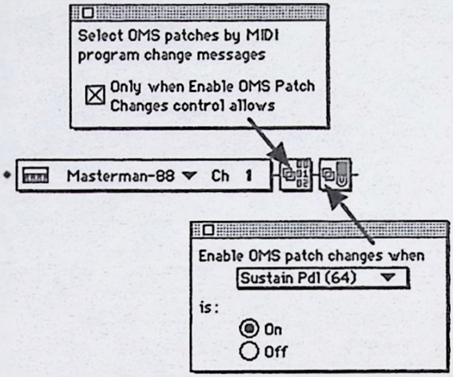
Figure 4.12: Example of an Studio Patch Change Connection

NOTE: Remember that Studio 5 footswitch and foot controller data is sent on MIDI Channel 15.

Using a Single Studio Patch Change and Enable Source

If you wish to use a single MIDI source for both Studio Patch changes and enabling, you'll use only one connection.

Assume, for example, that you wanted to send Studio Patch changes from your Masterman-88 controller while holding down its sustain pedal. You would create the connection shown in Figure 4.13.


Select OMS patches by MIDI program change messages

☒ Only when Enable OMS Patch Changes control allows

Masterman-88 Ch 1

Enable OMS patch changes when Sustain Pdl (64)

is:

● On

○ Off

Figure 4.13: Single Studio Patch Change and Enable Source

PATCH CHAIN CONTROLS MODULE

Figure 4.14: Patch Chain Controls Module

Use this module to select a pair of MIDI controls to step up or down through a predefined Patch Chain. You define the Patch Chain in the Patch Chain Edit window (see Chapter 9).

Place a Patch Chain Controls module to the right of a MIDI Source module using techniques discussed previously.

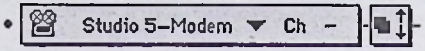
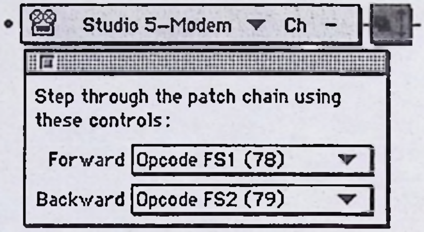


Figure 4.15: Adding a Patch Chain Controls Module

Editing the Patch Chain Controls Module

① **Double-click the Patch Chain Controls module to open its edit window.**



Step through the patch chain using these controls:

Forward: Opcode FS1 (78)

Backward: Opcode FS2 (79)

Figure 4.16: Patch Chain Controls Module Edit Window

② **Choose (from the Forward pop-up menu) the MIDI control you wish to use to step forward through the Patch Chain.**

③ **Choose (from the Backward pop-up menu) the MIDI control you wish to use to step backward through the Patch Chain.**

For the example shown in Figure 4.16, you would use the Studio 5's Footswitch #1 to step forward through a Patch Chain, and the Studio 5's Footswitch #2 to step backward through a Patch Chain.

Patch Chains wrap around. When you reach the last patch in a chain, the next step will return you to the first patch in the chain.

See the next chapter to learn how to set up a Patch Chain.

NETWORKING NOTE: If you're using multiple interfaces, Opcode recommends you connect all MIDI devices defined as Patch Chain control sources to the same interface. The reason is that each microprocessor (whether it's in the Macintosh or an interface) has its own concept of the current location in the patch chain. If you use different devices connected to different interfaces to advance a patch chain, you may not get the results you expect.

CHAPTER 5: Patch Chains

The Patch Chain edit window creates a list of patches used by the Patch Chain Controls module (discussed in the previous chapter). The Patch Chain Controls module (found in the Program Change Sources window) lets you step through a predetermined patch sequence using an external MIDI controller.

This chapter discusses creating and editing a Patch Chain.

OPENING A PATCH CHAIN EDIT WINDOW

Click the **Patch Chain** button in the patch document window, or choose **Edit Patch Chain** from the **Patch** menu to open the Patch Chain edit window.

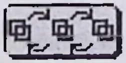


Figure 5.1: Patch Chain Button

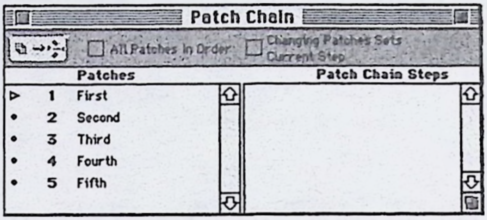


Figure 5.2: Empty Patch Chain Edit Window

PATCH CHAIN EDIT WINDOW TERMINOLOGY

Figure 5.3 shows the terminology for the Patch Chain edit window.

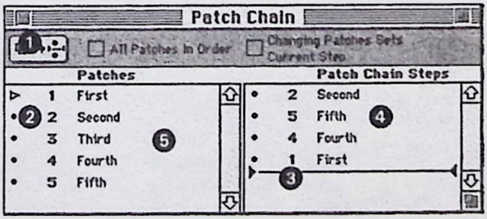


Figure 5.3: Anatomy of a Patch Chain Edit Window

❶ Insert Patch Chain Steps button
❷ Selector Dot
❸ Insertion Point
❹ Patch Chain List (each item in the list is called a Step)
❺ Patch Document List

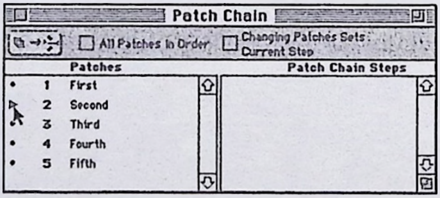
The Patch Chain edit window is divided into two scrolling lists. The list on the left is a copy of the current patch document. It lists all the current patches and shows the first line of each patch description. The list on the right is the patch chain.

CREATING A PATCH CHAIN

You create a Patch Chain by defining an insertion point in the Patch Chain List and selecting patches from the Patch Document List.

The Patch Chain List is blank when you first open an empty Patch Chain edit window.

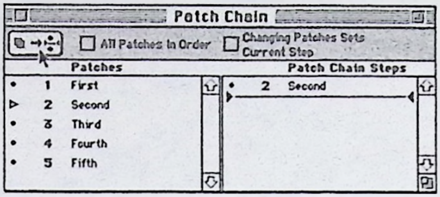
① **Click the selector dot of a patch in the Patch Document List.**



• 1 First
▷ 2 Second
• 3 Third
• 4 Fourth
• 5 Fifth

Figure 5.4: Select Patch from Patch Document List

② **Click the Insert Patch Chain Steps Button to insert the patch in the Patch Chain List.**



• 1 First
▷ 2 Second
• 3 Third
• 4 Fourth
• 5 Fifth

• 2 Second

Figure 5.5: Click Patch Chain Steps Button

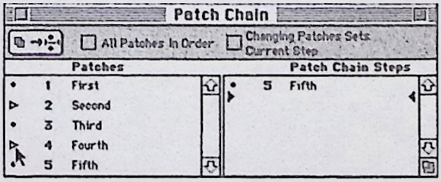
Notice that the insertion point moves to follow the step you just inserted.

SHORTCUT: Double-click a selector dot in the Patch Document List to insert that patch into the Patch Chain List automatically. When you double-click a patch selector dot, you do not have to click the Insert Patch Chain Steps *button to insert the patch.*

Selecting Multiple Patches

You can insert multiple patches into the Patch Chain List by selecting more than one patch at a time from the Patch Document List.

① **Shift-click two or more patches in the Patch Document List.**



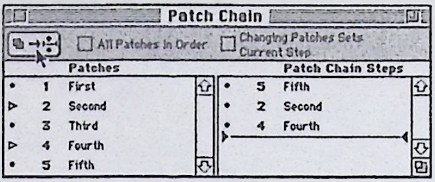
• 1 First
▷ 2 Second
• 3 Third
▷ 4 Fourth
• 5 Fifth

• 5 Fifth

Figure 5.6: Shift-Clicking Multiple Patches

② **Click the Insert Patch Chain Steps button to insert the selected patches**

at the insertion point in the Patch Chain List.



☐ All Patches In Order ☐ Changing Patches Sets Current Step

Patches			Patch Chain Steps		
•	1	First	•	5	Fifth
▷	2	Second	•	2	Second
•	3	Third	•	4	Fourth
▷	4	Fourth			
•	5	Fifth			

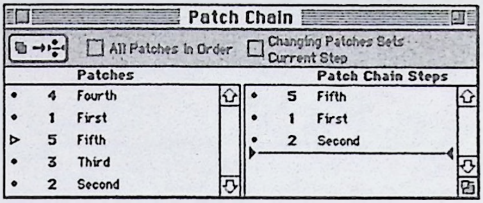
Figure 5.7: Inserting Multiple Patches

Using the "All Patches In Order" Check Box

The **All Patches In Order** check box, when checked, *replaces* the current patch chain with a chain containing all patches in the patch document. Patches appear in numerical order (not necessarily in the order they appear in the Patch Document List). If you add, remove, or renumber patches in a patch document when the **All Patches In Order** box is checked, the Patch Chain will change to always reflect your patch document.

You may not make changes directly to the Patch Chain List when the **All Patches In Order** box is checked. If you want to make changes to a Patch Chain List, first uncheck the **All Patches In Order** check box.

Assume, for example, that you had the Patch Chain shown in Figure 5.8.

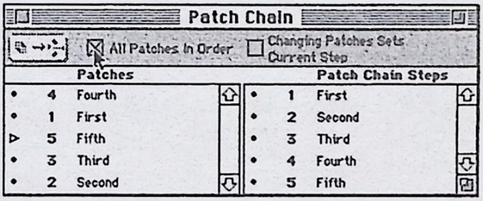


☐ All Patches In Order ☐ Changing Patches Sets Current Step

Patches			Patch Chain Steps		
•	4	Fourth	•	5	Fifth
•	1	First	•	1	First
▷	5	Fifth	•	2	Second
•	3	Third			
•	2	Second			

Figure 5.8: Patch Chain Before Checking All Patches In Order

Click the **All Patches In Order** check box to check it. Your Patch Chain now lists, in numerical order, all the patches in your current patch document (see Figure 5.9).



☒ All Patches In Order ☐ Changing Patches Sets Current Step

Patches			Patch Chain Steps		
•	4	Fourth	•	1	First
•	1	First	•	2	Second
▷	5	Fifth	•	3	Third
•	3	Third	•	4	Fourth
•	2	Second	•	5	Fifth

Figure 5.9: Patch Chain After Checking All Patches In Order

EDITING A PATCH CHAIN

You may copy, cut, paste and clear Patch Chain Steps. Cut and copied Patch Chain Steps appear in the Clipboard window. The following example shows how to copy and paste a Patch Chain Step.

① **Click the selector dot next to the Patch Chain Step you wish to copy.**

② **Choose Edit>Copy.**

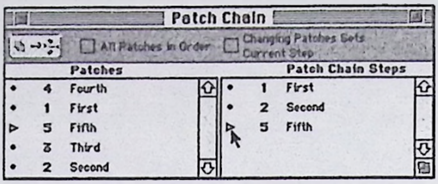


Figure 5.10: Select and Copy a Patch Chain Step

③ **Click between Patch Chain Steps to select a new insertion point.**

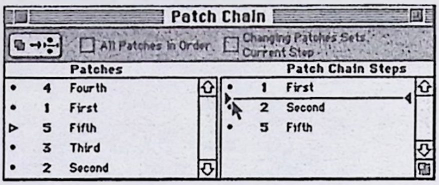


Figure 5.11: Defining an Insertion Point

④ **Choose Edit>Paste to paste the copied Patch Chain Step at the insertion point.**

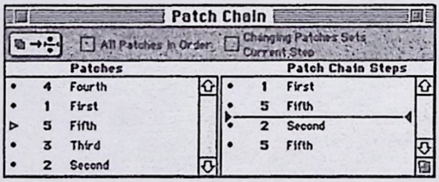


Figure 5.12: Pasting a Patch Chain Step

If you paste a cut or copied Patch Chain Step without selecting an insertion point, it will be inserted at the end of the Patch Chain List. As an example...

① **Copy a Patch Chain Step to the Clipboard as shown in Figure 5.13.**

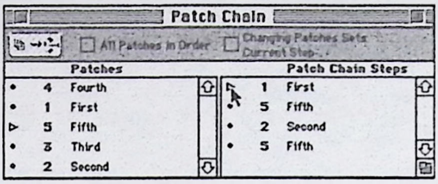


Figure 5.13: Copying a Patch Chain Step

② **Paste the Patch Chain Step without choosing an insertion point. Look at Figure 5.14 to see that the Patch Chain Step was pasted to the end of the Patch Chain List.**

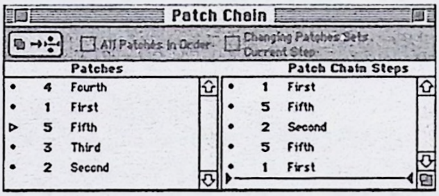


Figure 5.14: Pasting to the End of the Patch Chain List

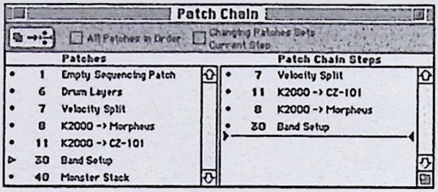
NOTE: If the Insert Patch Chain Steps *button is dimmed, it means you have not defined an insertion point. If you paste a Patch Chain Step without selecting an insertion point, it will appear at the end of the Patch Chain List.*

CHANGING THE PATCH DOCUMENT

If the Patch Chain references a patch that you later remove from the patch document window, the Patch Chain continues to reference the patch by its number.

Follow this example to see how deleting a patch affects the Patch Chain:

① **Look at the Patch Chain window shown in Figure 5.15. Notice the position of Patch #8 in both the Patch Document List and the Patch Chain List.**


Patch Chain

☐ All Patches in Order
☐ Changing Patches Sets Current Step

Patches

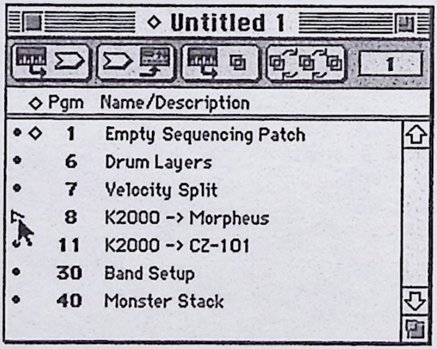
•	1	Empty Sequencing Patch
•	6	Drum Layers
•	7	Velocity Split
•	8	K2000 -> Morpheus
•	11	K2000 -> CZ-101
▷	30	Band Setup
•	40	Monster Stack

Patch Chain Steps

•	7	Velocity Split
•	11	K2000 -> CZ-101
•	8	K2000 -> Morpheus
•	30	Band Setup

Figure 5.15: Typical Patch Chain Window

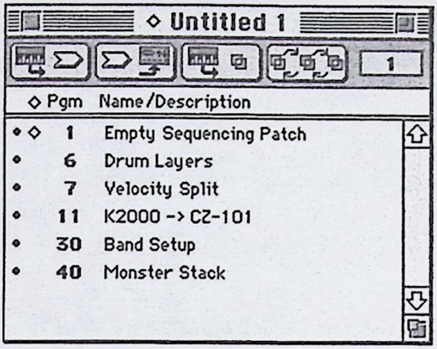
② **Open the current Patch Document window and select Patch #8.**


◇ Untitled 1

	◇ Pgm	Name/Description
• ◇	1	Empty Sequencing Patch
•	6	Drum Layers
•	7	Velocity Split
▷	8	K2000 -> Morpheus
	11	K2000 -> CZ-101
•	30	Band Setup
•	40	Monster Stack

Figure 5.16: Selecting a Patch in the Patch Document Window

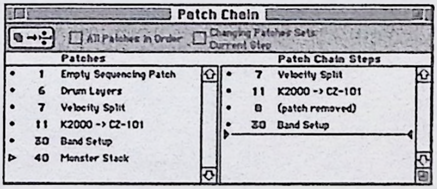
③ **Choose Edit>Clear to remove Patch #8.**


◇ Untitled 1

	◇ Pgm	Name/Description
• ◇	1	Empty Sequencing Patch
•	6	Drum Layers
•	7	Velocity Split
•	11	K2000 -> CZ-101
•	30	Band Setup
•	40	Monster Stack

Figure 5.17: Clearing a Patch in the Patch Document Window

Look at the Patch Chain window. Notice that Patch #8 has disappeared from the Patch Document List. Notice that the Patch Chain List still references the missing patch, but indicates that the patch has been removed.


Patch Chain

☐ All Patches in Order
☐ Changing Patches Sets Current Step

Patches

•	1	Empty Sequencing Patch
•	6	Drum Layers
•	7	Velocity Split
•	11	K2000 -> CZ-101
•	30	Band Setup
▷	40	Monster Stack

Patch Chain Steps

•	7	Velocity Split
•	11	K2000 -> CZ-101
•	8	(patch removed)
•	30	Band Setup

Figure 5.18: Patch Chain After Deleting a Patch

USING A PATCH CHAIN

To use the Patch Chain, you must define a connection using a Patch Chain Controls module in the Program Change Sources window. See Chapter 8 for details.

NETWORKING NOTE: If you're using multiple interfaces, Opcode recommends you connect all MIDI devices defined as Patch Chain control sources to the same interface. The reason is that each microprocessor (whether it's in the Macintosh or an interface) has its own concept of the current location in the patch chain. If you use different devices connected to different interfaces to advance a patch chain, you may not get the results you expect.

Using the "Changing Patches Sets Current Step" Check Box

There may be times that you want to interrupt a pre-determined Patch Chain to use a different patch. The "Changing Patches Sets Current Step" check box determines how changing a patch affects your position in the Patch Chain.

If the "Changing Patches Sets Current Step" check box is unchecked, then the current Patch Chain step will be unaffected by changing patches. Any manual patch changes will not affect the current Patch Chain step. This could be useful if, in a live performance, you want to deviate from your pre-determined sequence and then return to the Patch Chain exactly at the point you left.

If the "Changing Patches Sets Current Step" check box is checked, then the current Patch Chain step will jump to the next step that matches the new patch. If the newly selected patch isn't contained in the Patch Chain, then the Patch Chain step does not change. This could be useful if, in a live performance, you want to jump around within your patch chain to change the order of your performance.

The following table illustrates how various changes affect the current Patch Chain step with and without the "Changing Patches Sets Current Step" option checked.

Assume your patch document contains the following patches: 1 2 3 4 5 6 7 8
and that your patch chain is as follows: 2 5 6 4 8 6. THEN...

If you current patch chain step is:	And you change the patch to:	Then, when you advance the patch chain with "Changing Patches Sets Current Step" *checked*, your chain advances to step:	When you advance the patch chain with "Changing Patches Sets Current Step" *unchecked*, your chain advances to step:
2 5 6 4 8 6	8	2 5 6 4 8 6	2 5 6 4 8 6
2 5 6 4 8 6	6	2 5 6 4 8 6	2 5 6 4 8 6
2 5 6 4 8 6	6	2 5 6 4 8 6	2 5 6 4 8 6
2 5 6 4 8 6	3	2 5 6 4 8 6	2 5 6 4 8 6

CHAPTER 6: Patch Sequences

Each Studio Patch can contain a pair of sequences—the Start Sequence and the End Sequence. A patch's Start Sequence is a short list of MIDI events sent to various devices when the patch is recalled. The patch's End Sequence is a short list of events sent when a different patch is called up.

Start Sequences are very useful for sending program changes, system exclusive patch data, initial controller values, or note off commands to a device when a patch is selected. End Sequences are often used, when leaving a patch, to undo the effects of the start sequence.

NOTE: *Sequence events are sent one immediately after another. They do not contain timing information.*

CREATING/EDITING PATCH SEQUENCES

① **Select a patch by clicking its selector dot.**

② **Choose Edit Patch Start Sequence or Edit Patch End Sequence from the Windows menu.**

The sequence edit window opens.

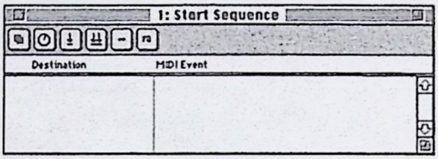


Figure 6.1: Start Sequence Edit Window

The seven buttons across the top of the sequence edit window represent different MIDI events. These are, from left to right: Program Change, Control, Mono Aftertouch, Poly Aftertouch, Pitch Bend, System Exclusive, and All Notes Off.

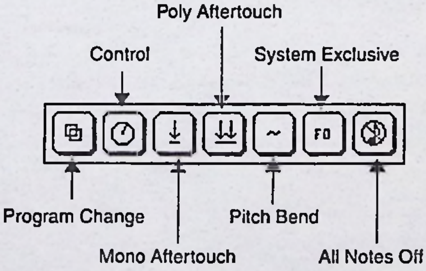


Figure 6.2: Sequence Event Buttons

Click each button and an undefined corresponding event appears in the space below the Module Palette.

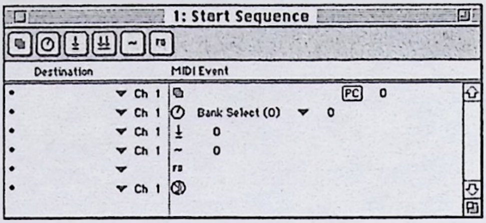


Figure 6.3: Undefined Start Sequence Events

Clicking a sequence event's selector dot selects that event. Shift-clicking sequence events will select more than one event for cutting, copying, or clearing. Sequence events can be rearranged by option-clicking their selector dots and dragging them to new locations.

Editing Events

You define and edit most MIDI events by choosing MIDI destinations and MIDI control numbers from pop-up menus. Select MIDI channels and event values by their corresponding numericals.

Program Change Events

Program change events show up as numbers, names, or both. You can change the patch by clicking on it and choosing a new one from the Program pop-up. For instructions on getting names to show up, see Chapter 7: The Names Window.

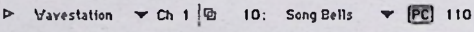
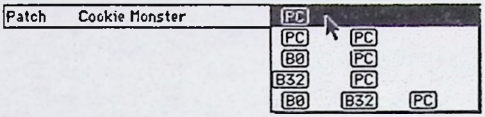


Figure 6.4: Program Change Event

If the device isn't subscribed to a patch name document via the Name Manager, you will be able to click on the rightmost part of the patch line to display the following pop-up menu:



Using this menu you can access the five different type of patch change messages. The different types allow you to change patches on synths that access more than 128 patches via bank select messages, or multiple program change messages. In all cases, there will be numericals next to the boxed icons that you can set to the appropriate values. If you are using the Name Manager to provide patch names, you won't need to set the numericals manually; they are filled in automatically whenever you select a patch.

Here are the five types of patch change message:

- **PC**: Sends a program change message only.
- **PC PC**: Sends two program changes in rapid succession. Some synths use the first message to set the hundreds digits and the second message to set the tens and ones digit. For example, PC 105 PC 38 would set the channel to program 538.
- **B0 PC**: Sends a bank select 0 message followed by a program change.

- **B32 PC**: Sends a bank select 32 message followed by a program change.
- **B0 B32 PC**: Sends a bank select 0 message, a bank select 32 message, and a program change.

Check your synthesizer's documentation to find out what sort of patch change(s) it requires.

The System Exclusive Event

To edit a system exclusive event:

① **Click the area to the right of the "F0" icon to open an Edit Event window.**

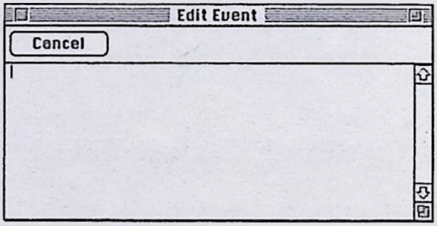
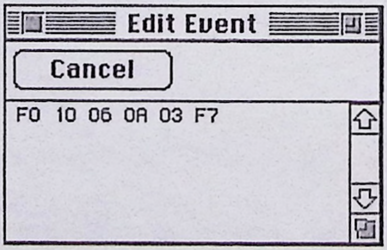


Figure 6.5: Empty Edit Event Window

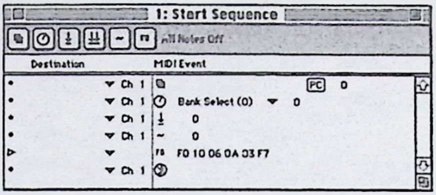
② **Type in the desired hexadecimal data.**



F0 10 06 0A 03 F7

Figure 6.6: Entering Data Into Edit Event Dialog

③ **Click the close box to return to the Sequence Edit window. The data is displayed in the MIDI Event column.**



Destination	MIDI Event
Ch 1	PC 0
Ch 1	Bank Select (0) 0
Ch 1	0
Ch 1	0
	F0 10 06 0A 03 F7
Ch 1	

Figure 6.7: Sequence Edit Window w/SysEx Event Defined

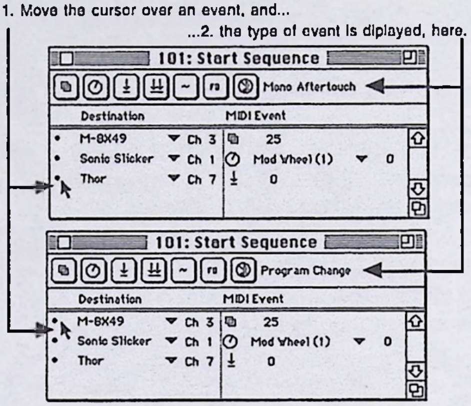
You may enter any MIDI event into the system exclusive edit dialog. System exclusive data must be four bytes or more and end with F7. Non-system exclusive data must start with a value between 80 and FF (except F5 which is reserved) and it must be three bytes or less.

You can paste system exclusive data from the Macintosh's Clipboard. If you have a large string of system exclusive data (like a patch dump), it can be copied to the Clipboard from within Vision (or Studio Vision) and then pasted into the Edit Event window.

NOTE: System Exclusive messages in a Start or End Sequence should always be sent directly to the intended device. Sending SysEx to a Virtual Instrument containing a splitter module and different devices thickens the MIDI data stream unnecessarily. Sending SysEx to a Virtual Instrument consisting of a splitter module routed to different channels of the same device will corrupt the data.

Viewing Sequence Event Types

You can move the cursor over a sequence event in a Sequence editing window and see the event type's name displayed. This makes it easier to edit long Start or End Sequences.


1. Move the cursor over an event, and...
...2. the type of event is diplayed, here.
101: Start Sequence
Mono Aftertouch
101: Start Sequence
Program Change

Destination		MIDI Event		
M-8X49	Ch 3	25		
Sonic Slicker	Ch 1	Mod Wheel (1)		0
Thor	Ch 7	0		

Figure 6.8: Viewing a Sequence's Event Type

You will also see the event name displayed when you move the cursor over any of the sequence event buttons.

SENDING ALL NOTES OFF EVENTS

OMS does not automatically send note off commands when you change patches. If you hold notes and change patches, any devices not used in the new patch will not receive note off commands. This is useful in live performance for changing patches while sustaining chords or synth pads. If you wish any held notes to turn off when you change patches, you should send an All Notes Off event in a Patch End Sequence.

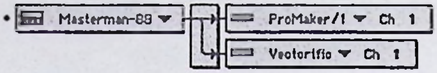
There are two ways to send an All Notes Off event to your devices: use the MIDI All Notes Off command or use the All Notes Off button. If your device responds to the MIDI All Notes Off command, insert a Control Patch Sequence event, and select Control 123. If your device does *not* respond to the MIDI All Notes Off command, you should use the All Notes Off button—this sends actual note off commands to all 128 MIDI notes on the specified channel (and, consequently, takes a couple more seconds).

PATCH SEQUENCE EXAMPLE

Let's assume, for example, that you're performing in a live situation and need to define Patch #2 as a MIDI "stack" that combines a modulated vibe sound from the ProMaker/1 with a soft organ sound from the Vectorific.

Defining the Start Sequence

① **Define the patch using the techniques discussed in previous chapters.**



You must now define a Start Sequence that sets the ProMaker/1 and Vectorific to the proper sounds, volumes and modulations.

② **Choose Edit Patch Start Sequence from the Patch menu to open a Start Sequence edit window.**

Assume that the ProMaker/1 has Patch #12 defined as a Vibe sound.

③ **Click the Program Change sequence event button to place an undefined Program Change sequence event in the edit area.**

④ **Choose the ProMaker/1 from the Destination pop-up menu**

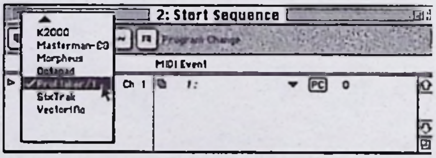
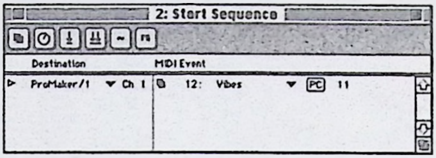


Figure 6.9: Selecting a Destination Device

⑤ **Select Patch #12 as the Program Change number from the MIDI Event pop-up menu.**

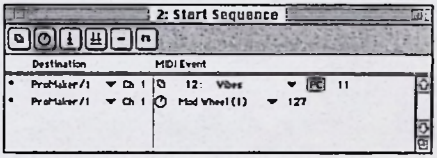


2: Start Sequence

Destination		MIDI Event		
ProMaker/1	Ch 1	12: Vibes	PC	11

Figure 6.10: Selecting a Program Change Number

⑥ **Click the Control sequence event button, choose the ProMaker/1 as the destination, the Mod Wheel as the MIDI Event and 127 as its value. This sets the vibe sound's modulation to full value.**



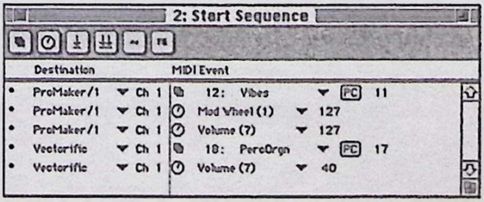
2: Start Sequence

Destination		MIDI Event		
ProMaker/1	Ch 1	12: Vibes	PC	11
ProMaker/1	Ch 1	Mod Wheel (1)	127	

Figure 6.11: Setting a Control Event

⑦ **Choose the desired organ patch for the Vectorific and set each synthesizer's volume level using MIDI Volume Control.**

The final start sequence would look as shown in Figure 6.12.



2: Start Sequence

Destination		MIDI Event		
ProMaker/1	Ch 1	12: Vibes	PC	11
ProMaker/1	Ch 1	Mod Wheel (1)	127	
ProMaker/1	Ch 1	Volume (7)	127	
Vectorific	Ch 1	18: PercOrgn	PC	17
Vectorific	Ch 1	Volume (7)	40	

Figure 6.12: Fully Defined Start Sequence

Now, whenever you recall Patch #2, your Masterman-88 keyboard will control a stack that combines the ProMaker/1 (Channel 1, Patch #12 with full modulation and volume) with the Vectorific (Channel 1, Patch #63 and a MIDI volume level of 40).

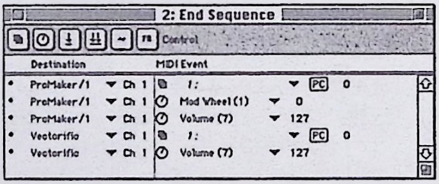
Defining the End Sequence

You'll need to create an End Sequence to undo the effects of the Start Sequence. The End Sequence will play whenever you recall a patch other than Patch #2.

To create an End Sequence:

① **Choose Edit Patch End Sequence from the Patch menu to open an End Sequence edit window.**

② **Define Program Change and Control events to undo the effects of the patch's Start Sequence.**



Destination		MIDI Event		
ProMaker/1	Ch 1	1:	PC	0
ProMaker/1	Ch 1	Mod Wheel (1)		0
ProMaker/1	Ch 1	Volume (7)		127
Vectorific	Ch 1	1:	PC	0
Vectorific	Ch 1	Volume (7)		127

Figure 6.13: Fully Defined End Sequence

The End Sequence shown in Figure 6.13 will reset the ProMaker/1 and Vectorific to Patch #0, their volumes to 127, and the ProMaker/1's Mod Wheel value to zero whenever you select a different Studio Patch.

CHAPTER 7: The Names Window

Choosing **Windows>Device Patch Names** opens the OMS Name Manager.

The Name Manager integrates patch documents from a variety of sources:

- Galaxy bundles
- Studio Patches Editor documents
- Typed-in patch name documents
- Documents from other OMS-2 compatible librarians

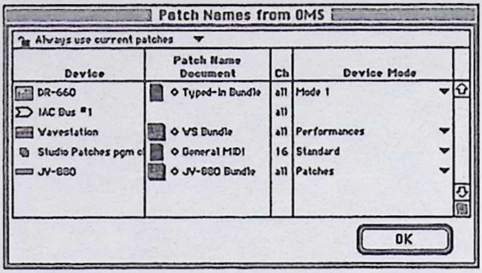
Once you set up the Name Manager, the Studio Patches Editor's pop-up menus display the names of your synthesizer patches, not just their numbers. The Name Manager also takes care of the housekeeping involved when you open a file that uses a different set of patch names.

TERMINOLOGY

It seems like every synthesizer manufacturer has come up with different names for the various features on their gear. This mini-glossary of terms should help make sure that you understand what we mean when we say, for instance, "patch."

- **Patch**: a user-selectable collection of parameters in a device, usually recallable via a MIDI program change message.
- **Device Mode**: a state of a device in which MIDI program change messages are interpreted in a distinct manner. For example, some devices have "standard mode" and "drums mode", or "voice mode" and "performance mode". If a device interprets a MIDI program change differently depending on the mode setting, then the Name Manager will provide a way for you to maintain information about the separate modes.
- **Patch Document** (or **Patch Name Document**): a document that contains patches for one or more modes of one or more devices. (e.g. a Galaxy bundle).
- **Name Setup**: for each device in the current Studio Setup document, a reference to a patch document, and a mode selection per channel.
- **Subscription**: a device that has a patch document associated with it is said to be "subscribed" to the patch document.
- **Current**: a patch document is current if its patches are loaded in a device.

NAME SETUP WINDOW



Patch Names from OMS

Always use current patches

Device	Patch Name Document	Ch	Device Mode
DR-660	◇ Typed-In Bundle	all	Mode 1
IAC Bus #1		all	
Wavestation	◇ VS Bundle	all	Performances
Studio Patches pgm c	◇ General MIDI	16	Standard
JV-880	◇ JV-880 Bundle	all	Patches

Figure 7.1: Name Setup Window

The name setup window opens when you choose **Windows>Names**. The window displays an OMS name setup, which contains a reference to a patch document for each device in the current studio setup. In addition, for devices that have multiple modes of receiving program changes, the name setup contains a mode selection for each channel of each device. This information is saved with your file when you use the **Save** or **Save As** commands.

Every device in the current Studio Setup appears in the name setup window. In addition, any devices that have patch names but are not in the current Studio Setup appear in the window, with their names in italics.

Current Patches Pop-Up Menu

It is possible for other programs to modify name setups. For example, you can make bundle current from within Galaxy. This pop-up menu controls what happens when name setups are changed from other applications.

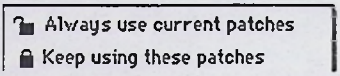


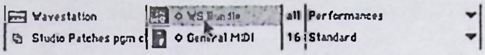
Figure 7.2: Current patch pop-up menu

- **Always use current patches:** Making a file current in another application changes the name setup in the Studio Patches Editor.
- **Keep using these patches:** this “locks in” the current patch name documents. Subscriptions won’t automatically be changed.

New Studio Patch documents initially set this pop-up to “Always use current patches.” However, when you open an already created document, its pop-up is automatically set to “Keep using these patches” so as to preserve the references to the patches which were used when the file was created. If you change the pop-up to “Always use current patches”, you will be asked to confirm this choice, and then your document will be resubscribed to the current patches.

Patch Name Document Column

The **Patch Name Document** column shows the name of a subscribed document (such as a Galaxy bundle) for each device. If the document is current, a diamond appears before its name. If the document can't be found, its name appears in italics. You may double click on the patch document name to open patch name windows, which are described on page 67.



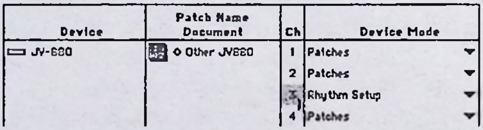
Wavestation	◇ VS Bundle	all	Performances
Studio Patches pgm c	◇ General MIDI	16	Standard

Figure 7.3: Double-clicking a bundle name opens a patch name window.

Channel Column

The **Ch** (Channel) column either displays 'all', or shows a separate line for each channel on which the device can receive. This is controlled, per device, by the **Show Channels** menu command.

Double-clicking on a number in the **Ch** column opens a window showing the names for the channel's mode. This is important when you're using a device with different modes on different channels, as it is the only way to view a mode other than the first one.



Device	Patch Name Document	Ch	Device Mode
JV-880	◇ Other JV880	1	Patches
		2	Patches
		3	Rhythm Setup
		4	Patches

Figure 7.4: Double-clicking a channel number opens the mode associated with that channel.

Device Mode Column

If a given device supports multiple modes, then the **Device Mode** column contains a pop-up menu that lists those modes. If individual channels are *not* being shown ("all" appears in the Ch column), the word "Various" may appear in this column, indicating that not all channels are receiving in the same mode. To see all the channels listed individually, use the Show Channels command (see page 67).

NAMES MENU

The following menu becomes available when you use the Name Manager:

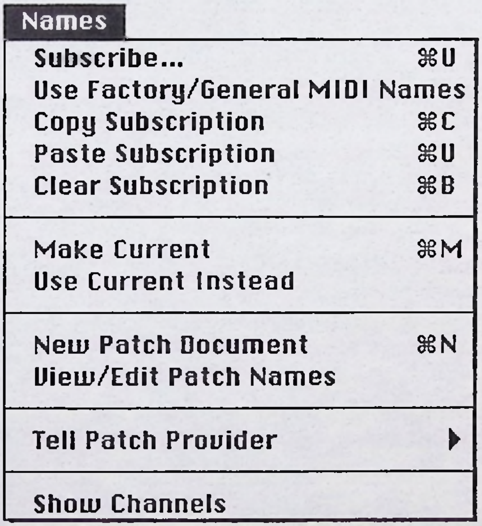


Figure 7.5: Name Window Menu

Subscribe

Subscribe allows you to select a patch document to which all the selected devices will be subscribed.

Use Factory/General MIDI Names

Some devices have built-in patches that cannot be altered. If you have such a device, and a file exists in the OMS Factory Names folder, choosing this command removes any custom patch document and uses the device's default names.

If the device doesn't have an associated Factory Names file, the General MIDI patch names are used instead.

Copy Subscription

This command copies the subscription of the selected device(s) to the clipboard.

Paste Subscription

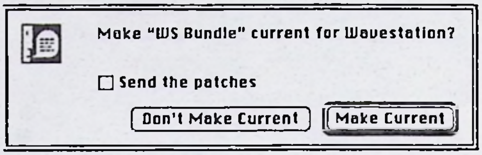
This command pastes subscriptions on the clipboard onto the selected device(s). Any existing subscription is ignored; the new document becomes current automatically.

Clear Subscription

Removes the subscription information for any selected device(s).

Make Current

When you choose this command, the following dialog box appears:



Make "WS Bundle" current for Wavestation?

☐ Send the patches

You can change your mind by clicking **Don't Make Current**.

If the **Send the patches** box is available and checked when you click **Make Current**, the Name Manager attempts to transmit the patches to the device. The application that created the patch name document must be capable of this operation. For example, names obtained from a Galaxy bundle will work, but typed-in names documents won't. The box won't appear at all in the latter case.

Use Current Instead

Use Current Instead replaces the selected devices' non-current subscriptions with subscriptions to the current patch document(s) for those devices.

New Patch Document

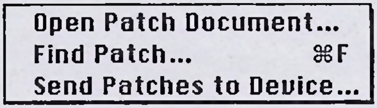
Creates a blank, untitled patch document for the selected device(s).

View/Edit Patch Names

Choosing this command is equivalent to double-clicking on a device's Patch Name Document column. You must select a device before choosing this command.

Tell Patch Provider

This menu item contains a sub-menu that lists the commands that can be sent to the patch provider.



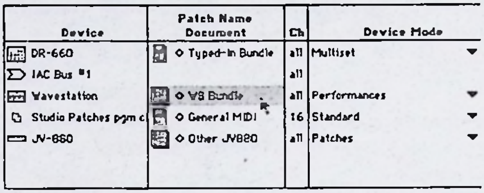
If the patch provider understands the chosen message, it will perform that action. For example, if the patch names come from a Galaxy bundle and you choose Send Patches To Device, OMS will tell Galaxy to send the patch bundle to the selected device.

Show Channels

Show Channels controls whether the name setup window displays one line per channel or a single line for the entire selected device(s). To select different modes on different channels (e.g., "synth" mode on channels 1-9 and "drum" mode on channel 10), this option must be selected. If you deselect this option, the individual modes will still be remembered, and the device's mode field will read "Various."

PATCH NAMES

The patch name window lets you view the names in a document supplied by a librarian, or type in your own. To open a patch name window, double-click on the name of a patch document in the name setup window.

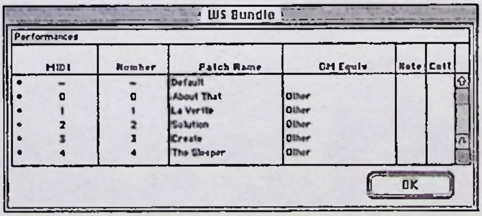


Device	Patch Name Document	Ch	Device Mode
DR-660	◇ Typed-In Bundle	all	Multiset ▼
IAC Bus #1		all	
Wavestation	◇ WS Bundle	all	Performances ▼
Studio Patches pgm c	◇ General MIDI	16	Standard ▼
JV-660	◇ Other JV880	all	Patches ▼

Figure 7.6: Double-click the patch name document to open the corresponding patch name window.

If the patch document contains multiple modes, you'll only see the patch names for the selected channel's current mode.

To see a different mode, make sure that you are showing all channels in the main Name Setup window, then double-click the *channel number* of a channel that is set to the mode you wish to view. For example, in a General MIDI device, double-clicking the number "10" in the Ch column opens the Drums mode.



	MIDI	Number	Patch Name	GM Equiv	Note	Coll
●	–	–	Default			
●	0	0	About That	Other		
●	1	1	La Verite	Other		
●	2	2	Solution	Other		
●	3	3	Create	Other		
●	4	4	The Sleeper	Other		

Figure 7.7: Patch Name Window

A patch document contains any number of modes, each mode containing any number of banks of 128 patches. For typed-in documents, you may enter a name and number for each patch. Each patch may have a list of note and control names. You may also define default note and control names per mode, which are used whenever a patch has no note or control names of its own, or no name for a particular note or control.

Patch documents for which you typed in the names are called **Typed-In Patch Name Documents**. This is to distinguish them from Patch Names retrieved from, for example, a Galaxy bundle.

The Name Manager also allows you to attach note and control names to patch documents other than ones you type in. Double-click the **Note Name Document** or **Control Name Document** columns to open windows where you can enter the information. You are asked if you want to save the Note or Control Name information when you close their respective windows.

Patch Name Menu Commands

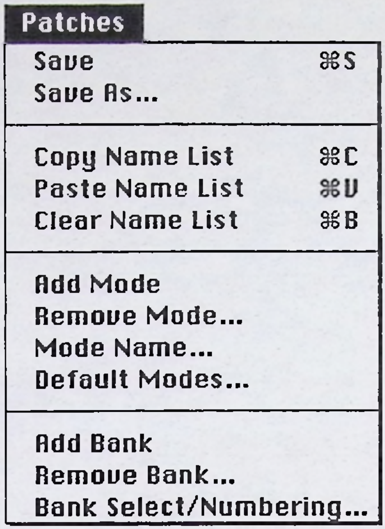


Figure 7.8: Patch Name Window Menu

NOTE: Most of these menu items only apply to patch documents you create by typing in; they're disabled for documents that come from other applications, such as Galaxy.

Saving

If you are viewing a typed-in patch document, Save and Save As are used to save it to your disk.

You cannot save a patch document created by another application. However, if you have added note or control names to another application's document, the **Save Note/Control Names** command will become available. This command adds the note and control name information to the document—you can't save it in a separate file.

NOTE: If you use Save As *on a non-typed-in patch document, it becomes a typed-in patch document.*

Copy and Paste

Copy Name List and **Paste Name List** are used to copy name lists between devices.

Names are copied to the clipboard as text, so you can paste them into another application. For example, you could paste them into a word processor and then print out the patch list to keep near your device. Each line is copied as:

Patch Number <tab> Patch Name

Text on the clipboard can also be pasted in as names. If any patches are selected, the clipboard is pasted to the selected patches. If no patches are selected, the clipboard is pasted to all patches starting with the first.

If the lines of text contain tabs, they are interpreted as"

Patch Number <tab> Patch Name

Otherwise, each line of text becomes a patch name.

Clear Name List

This command erases the currently selected name list.

Mode Commands

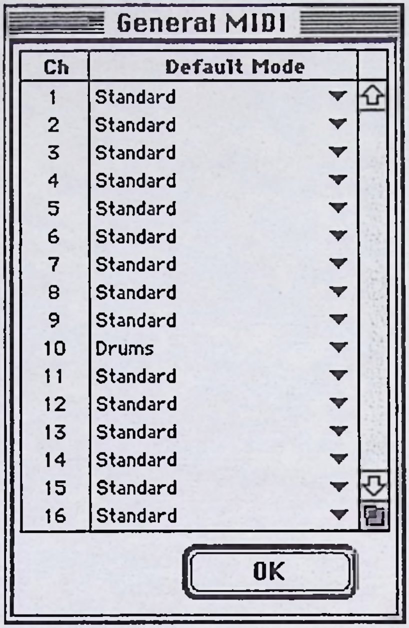
Add Mode creates an entirely new mode for the document, and opens a new window to display it.

Remove Mode removes the mode displayed in the active window.

Mode Name lets you name the mode displayed in the active window. The mode name appears on the top line of the window.

Default Modes opens a window where you select a default mode for each channel. Whenever this patch document is subscribed, the channels will be set to the modes designated in this window.

Example: General MIDI devices have two modes: "standard" and "drums". Channel 10 is always in drum mode, and all other channels are in standard mode. Figure 7.9 shows the default mode screen set up for a General MIDI device.



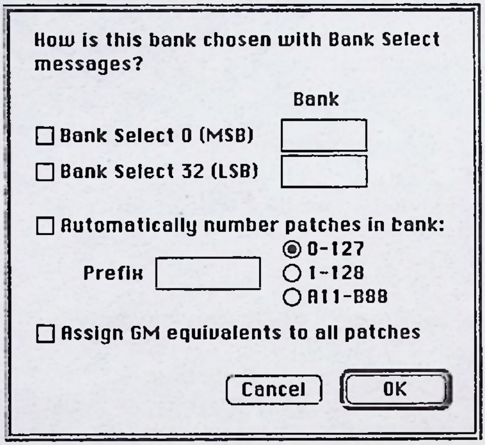
General MIDI

Ch	Default Mode
1	Standard
2	Standard
3	Standard
4	Standard
5	Standard
6	Standard
7	Standard
8	Standard
9	Standard
10	Drums
11	Standard
12	Standard
13	Standard
14	Standard
15	Standard
16	Standard

Figure 7.9: Default Mode Window

Bank Commands

Add Bank creates a new bank of 128 patches following the bank containing the currently selected patch, or at the end of the document if there is no selection. Adding a bank or choosing the **Bank Select/Numbering** menu command opens the following dialog box:



How is this bank chosen with Bank Select messages?

Bank

☐ Bank Select 0 (MSB)

☐ Bank Select 32 (LSB)

☐ Automatically number patches in bank:

Prefix

● 0-127
○ 1-128
○ A11-B88

☐ Assign GM equivalents to all patches

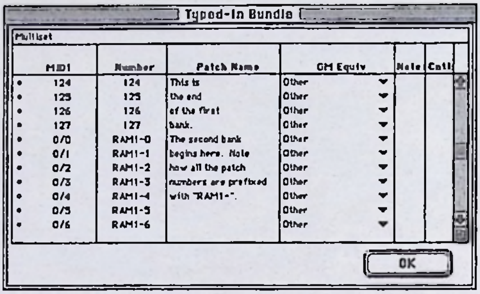
Figure 7.10: Bank Select/Numbering Dialog

You may specify a Bank Select message for the bank by checking one or both of the Bank Select check boxes to have that message sent, and by specifying the bank select value in the box to the right.

IMPORTANT: Each bank must have a unique bank select number. A warning message appears if two banks have the same bank select ID.

If you check the **Automatically number patches in bank** box, the patches will be automatically numbered according to the numbering scheme you select.

You can enter a prefix for the patch number in the **Prefix** box. For example, your synth may use banks with names like “RAM1”. You could number the patches “RAM1-0” thru “RAM1-127” by entering “RAM1-” in the **Prefix** box.



	MIDI	Number	Patch Name	GM Equiv	Note	Cntl
•	124	124	This is	Other		
•	125	125	the end	Other		
•	126	126	of the first	Other		
•	127	127	bank.	Other		
•	0/0	RAM1-0	The second bank	Other		
•	0/1	RAM1-1	begins here. Note	Other		
•	0/2	RAM1-2	how all the patch	Other		
•	0/3	RAM1-3	numbers are prefixed	Other		
•	0/4	RAM1-4	with "RAM1-".	Other		
•	0/5	RAM1-5		Other		
•	0/6	RAM1-6		Other		

Figure 7.11: Using the Prefix feature

If you check the **Assign GM equivalents to all patches** box, each patch will have a General MIDI patch equivalent assigned. This simply sets each patches’ GM equivalent to the number of the patch. It is useful if you have a bank configured to match the GM defaults.

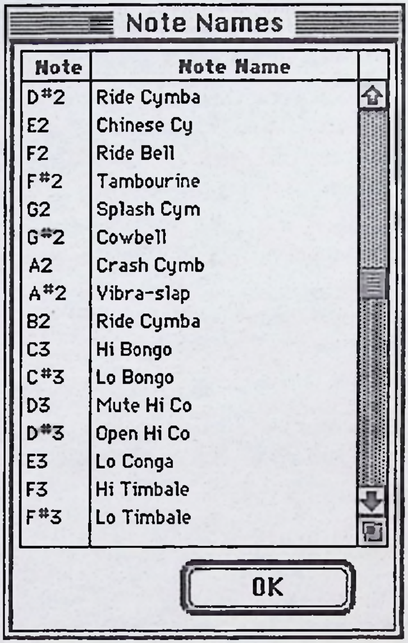
Remove Bank removes the bank in which the selected patch resides.

The **MIDI** column in the patch name window displays MIDI representations of patches in the form bank0/bank32/patch number (0-127). bank0 and bank32 are each omitted when not used, which is the case for the default first bank.

NOTE: If the device has less than 128 patches in a bank, just leave the unused patches blank and they won’t show up in patch selection menus or dialog boxes.

NOTE AND CONTROL NAMES

When you double-click the Note Name or Control Name columns in the patch window, a note or control name window opens.



Note	Note Name
D#2	Ride Cymba
E2	Chinese Cy
F2	Ride Bell
F#2	Tambourine
G2	Splash Cym
G#2	Cowbell
A2	Crash Cymb
A#2	Vibra-slap
B2	Ride Cymba
C3	Hi Bongo
C#3	Lo Bongo
D3	Mute Hi Co
D#3	Open Hi Co
E3	Lo Conga
F3	Hi Timbale
F#3	Lo Timbale

Figure 7.12: Note Name Window

Saving note or control names adds them to the name document, regardless of whether it is typed-in or from another application.

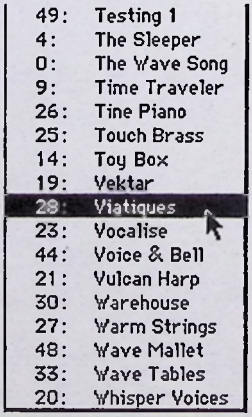
SELECTING NAMES

Once the various name lists are set up properly, the Studio Patches Editor will display names in all appropriate places (such as in Program Change events in Patch Start Sequences).

There are two ways to choose names:

- A simple pop-up menu of choices, either sorted alphabetically or numerically. This appears when you click on a name field.
- The "browser". This is a more sophisticated window where you can choose numeric or alphabetic sort, groupings, and more. This appears when you command- or option-click a name field.

Figure 7.13 shows the pop-up menu that appears when you click on a patch name field.

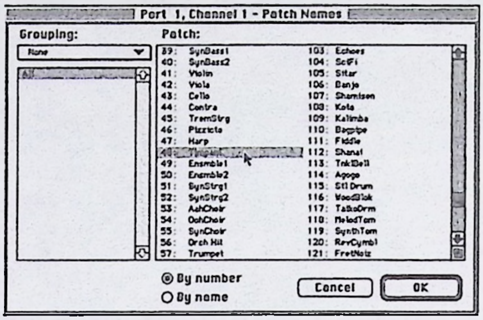


49: Testing 1
4: The Sleeper
0: The Wave Song
9: Time Traveler
26: Tine Piano
25: Touch Brass
14: Toy Box
19: Vektar
28: Viatiques
23: Vocalise
44: Voice & Bell
21: Vulcan Harp
30: Warehouse
27: Warm Strings
48: Wave Mallet
33: Wave Tables
20: Whisper Voices

Figure 7.13: Pop-up Patch Name Menu

Name Browser

If you option- or ⌘-click on a name field, a browser window opens:



39: SynBass1
40: SynBass2
41: Violin
42: Viola
43: Cello
44: Contra
45: TremStrg
46: Pizzicto
47: Harp
48: Timpani
49: Ensmble1
50: Ensmble2
51: SynStrg1
52: SynStrg2
53: AahChoir
54: OohChoir
55: SynChoir
56: Orch Hit
57: Trumpet
103: Echoes
104: SciFi
105: Sitar
106: Banjo
107: Shamisen
108: Koto
109: Kalimba
110: Bagpipe
111: Fiddle
112: Shanai
113: TnkBell
114: Agogo
115: Stl Drum
116: WoodBlok
117: TaikoDrm
118: MelodTom
119: SynthTom
120: RevCymbl
121: FretNoiz

◉ By number
○ By name

Figure 7.14: Patch Name Browser

The system sends each patch as it is selected. The By number/By name radio buttons sort the list by number or name; this is global and applies to pop-up menus as well.

Patch Name Hierarchy

The Grouping pop-up menu allows you to choose a grouping assignment for the current patch document. For example, the General MIDI patch name document contains the groupings None, General MIDI Groups and General MIDI Patches. If you select General MIDI Groups from the Grouping pop-up menu, you will be presented with this list of groupings in the browser window:

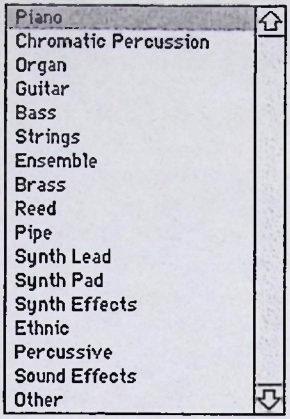


Figure 7.15: General MIDI Groups

Selecting an item from this list narrows the list of available patches to show only those patches that belong to the selected group. For example, patches in the Piano group include Grand Piano, Brite Piano, and so forth.

An additional advantage to using groupings is that patch selection menus (such as those found in the control bar or in the list window) now show their contents hierarchically; that is, arranged by group (as shown in Figure 7.16).

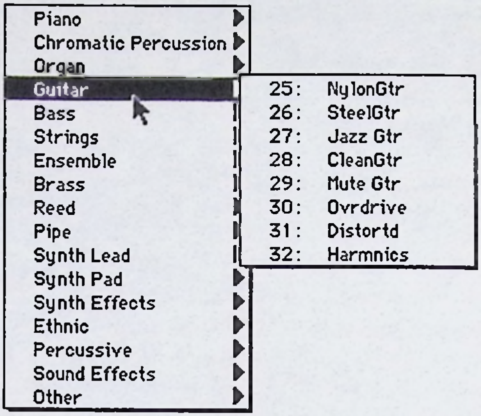


Figure 7.16: Hierarchical Patch Selection

You can create your own groupings with Galaxy, Opcode's patch librarian application. Also, Galaxy automatically provides groupings for certain synthesizers. You cannot create groupings with typed-in patch name documents.

Browser Menu

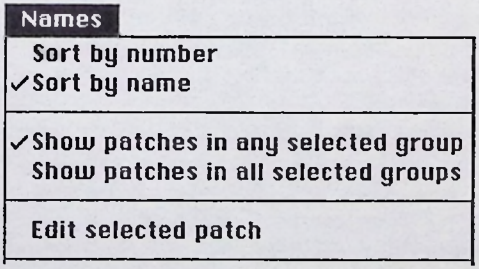

Names
Sort by number
✓Sort by name
✓Show patches in any selected group
Show patches in all selected groups
Edit selected patch

Figure 7.17: Browser Menu

When you use the name browser, the menu shown in Figure 7.17 becomes available.

Sort by Number/Sort By Name

These commands duplicate the function of the "By Name/By Number" buttons in the browser window.

Show Patches In Any/All Selected Group(s)

With "any selected group" selected, shift-clicking multiple groupings in the browser displays patches that belong to any of the selected groups (if you have programming experience, think of this as the "or" condition).

With "all selected groups" selected, shift-clicking multiple groupings in the browser only displays patches that belong to all of the groups (programmers can think of this as the "and" condition).

As an example, imagine you have a grouping for "bright" and a grouping for "piano." With "all selected groups" chosen, you would see only bright pianos listed, whereas with "any selected group," you would see all bright patches and all piano patches listed together.

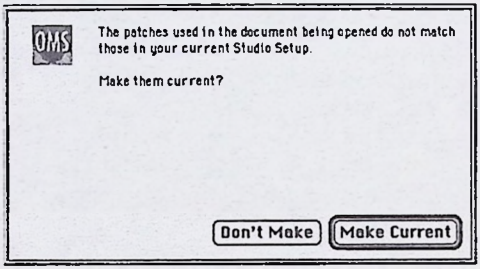
Edit Selected Patch

Tells the application which supplied the patch to start editing it, if the application supports the command.

OPENING FILES WITH DIFFERENT NAME SETUPS

The Studio Patches Editor saves Name Setups in its patch document files. When you open a file that contains a different name setup, you have to answer some questions to let the Name Manager know how you want to handle the different assignments. This section walks you through the possible outcomes.

First, you see the following dialog box:


The patches used in the document being opened do not match those in your current Studio Setup.

Make them current?

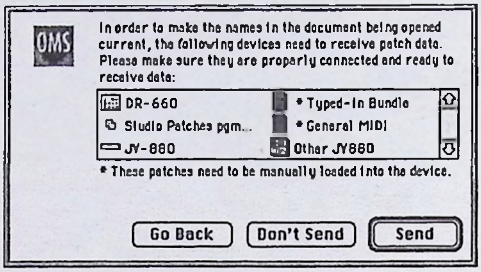
Figure 7.18: Different Name Setups - first dialog box

You have two choices at this point. The following sections describe these choices.

Make Current

This choice overrides all current Name Setup information with the information in the file being opened.

Usually if you want to change subscriptions, you also want to send the new patches to your synthesizers, and the Name Manager assumes that this is what you want to do. You will see a dialog box similar to the following, letting you know that transmission is going to start:



In order to make the names in the document being opened current, the following devices need to receive patch data. Please make sure they are properly connected and ready to receive data:

DR-660
Studio Patches pgm...
JV-880
* Typed-In Bundle
* General MIDI
Other JV880

* These patches need to be manually loaded into the device.

Figure 7.19: "Getting Ready To Send" dialog box

Typed-in patch documents have an asterisk (*) next to their name, letting you know that they can't be sent automatically. You should load up your devices with these patches in whatever manner is appropriate.

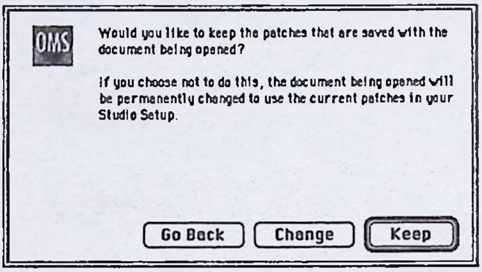
Documents that can't be found are displayed in *italics*.

When you are ready, you can click...

- **Send**: to send the bundles to the devices.
- **Don't Send**: to proceed without sending any data.
- **Go Back**: to return to the previous dialog box.

Don't Make

Clicking **Don't Make** leaves the current patches current. However, you still have a choice to make: do you want to change the document being opened to use the current Name Manager subscriptions, or do you want to leave the file alone?



Would you like to keep the patches that are saved with the document being opened?

If you choose not to do this, the document being opened will be permanently changed to use the current patches in your Studio Setup.

Figure 7.20: "Don't Make Current" dialog box

If you click...

- **Keep**: the document is unchanged.
- **Change**: the document is updated to use the current Name Manager subscriptions. If you save the file without changing its name, any record of the old subscriptions is lost.
- **Go Back**: returns to the previous dialog box.

CHAPTER 8: Menu Reference

This chapter documents each menu item and its function.

FILE MENU

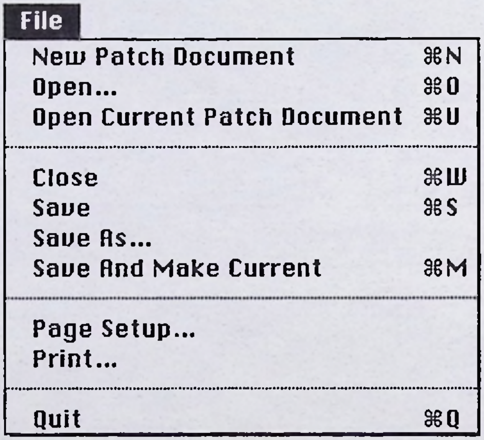


Figure 8.1: File Menu

New Patch Document

Creates a blank, untitled patch document.

Open

Presents a directory dialog box in which you can locate a previously-saved patch document to open. If the new document contains a name setup that differs from the current name setup, you are asked how you want to handle this situation. See *Opening Files With Different Name Setups (pg. 74)* for more information.

Open Current Patch Document

Automatically finds and opens the current patch name document.

Close

Closes the currently open patch name document.

Save/Save As

Writes the current patch document to disk. If the document has never been saved, Save and Save As both present directory dialog boxes, allowing you to choose a folder and name for the new file. If the file has already been saved, Save overwrites it without prompting.

Save And Make Current

Like Save (above), only it makes the document current at the same time. If the document doesn't need to be saved, this command appears just as **Make Current**.

Page Setup

Opens the Page Setup dialog box for the currently chosen printer.

Print

Prints a list of the patches in the open patch document, along with their numbers.

EDIT MENU

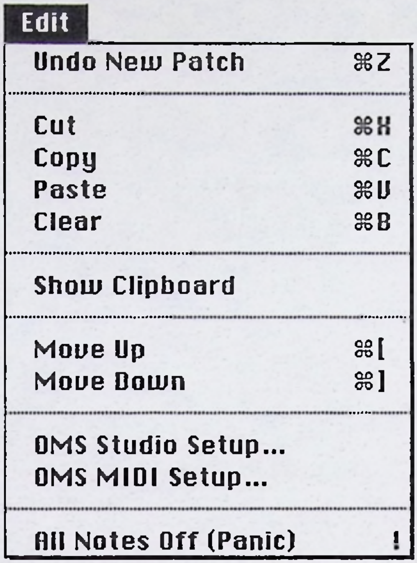


Figure 8.2: Edit Menu

UNDO

Reverses the previous operation, if possible.

CUT

Erases the current selection and puts it on the clipboard (presumably for pasting somewhere else).

COPY

Copies the current selection to the clipboard.

PASTE

Pastes the contents of the clipboard at the selection point, if the data is compatible. (You can't paste a copied patch into a patch's name field, for example.)

CLEAR

Erases the current selection completely. (You can still undo if you make a mistake.)

SHOW CLIPBOARD

Shows the current contents of the clipboard.

MOVE UP

Moves the selected item up the screen. Useful for rearranging patch lists or the patches themselves, to group similar entries together, for example.

MOVE DOWN

Moves the selected item down the screen.

OMS STUDIO SETUP

Opens the Studio Setup application. See the OMS documentation for a detailed description of this program.

OMS MIDI SETUP

Opens the OMS MIDI Setup dialog box. See the OMS documentation for a detailed description of this dialog box.

ALL NOTES OFF (PANIC)

Sends an "All Notes Off" message to every channel of every device on every interface. Useful for getting rid of stuck or hung notes.

PATCH MENU

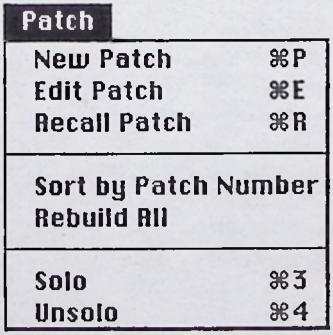


Figure 8.3: Patch Menu

New Patch

Choose **New Patch** to add a new empty patch to the patch document. Each patch document can hold up to 128 patches.

Edit Patch

Choose **Edit Patch** to open a patch editing window. This is the same as double-clicking a patch selector dot in the patch document window.

Recall Patch

Choosing **Recall Patch** is the same as clicking in a patch's diamond column. It makes the selected patch the current patch. After choosing **Recall Patch**, you will see a diamond next to the patch number to indicate that it is the current patch.

Sort By Patch Number

Choose the **Sort by Patch Number** command to view your patch document in numerical order. When the command has a check mark to its left, patches will *always* be displayed in numerical order. When the command is unchecked, patches can be in *any* order.

Rebuild All

Choose this command to rebuild all your patches. You will need to use **Rebuild All** only if your patches, virtual controllers, virtual instruments or program change sources aren't working, and the device menus in the appropriate windows don't contain italicized choices. This situation is most likely to occur if you switch between two very similar Studio Setups (for example, one with a Studio 4 on the modem port, and another with the same devices, but with the Studio 4 on the printer port).

Solo

Mutes all destinations in a patch except for the currently selected one(s).

Unsolo

Unmutes all selected destinations in a patch.

WINDOWS MENU

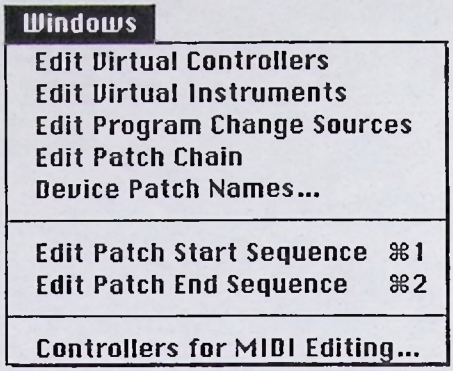

Windows
Edit Virtual Controllers
Edit Virtual Instruments
Edit Program Change Sources
Edit Patch Chain
Device Patch Names...
Edit Patch Start Sequence ⌘1
Edit Patch End Sequence ⌘2
Controllers for MIDI Editing...

Figure 8.4: Windows Menu

Edit Virtual Controllers

Choose **Edit Virtual Controllers** to open the active patch document's Virtual Controller editing window. Choosing this menu item is the same as clicking the **Virtual Controllers** button in the patch document window. Virtual controller editing is discussed in Chapter 3: Virtual Controllers and Virtual Instruments.

Edit Virtual Instruments

Choose **Edit Virtual Instruments** to open the active patch document's Virtual Instruments editing window. Choosing this menu item is the same as clicking the **Virtual Instruments** button in the patch document window. Virtual Instrument Editing is discussed in Chapter 3: Virtual Controllers and Virtual Instruments.

Edit Program Change Sources

Choose **Edit Program Change Sources** to open the active patch document's Program Change Source editing window. Choosing this menu item is the same as clicking the **Program Change Sources** button in the patch document window. Virtual Instrument Editing is discussed in Chapter 4: Program Change Sources.

Edit Patch Chain

Choose **Edit Patch Chain** to open the active patch document's Patch Chain edit window. Choosing this menu item is the same as clicking the Patch Chain button in the patch document window. Patch Chains are discussed in Chapter 5: Patch Chains.

Device Patch Names

This command opens the OMS Name Manager. See Chapter 7: The Names Window for more information.

Edit Patch Start Sequence

Choose this item to open a Patch Start Sequence edit window for the selected patch. For information on editing and using Start Sequences, see Chapter 6: Patch Sequences.

Edit Patch End Sequence

Choose this item to open a Patch End Sequence edit window for the selected patch. For information on editing and using End Sequences, see Chapter 6: Patch Sequences.

Controllers for MIDI Editing

Choose Controllers for MIDI Editing to produce a dialog containing a list of all devices defined in your current Studio Setup document. In the dialog, select those devices you wish to use for MIDI entry of patch edit parameters.

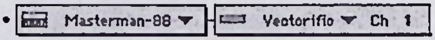
CHAPTER 9: Patch Ideas

This chapter contains some ideas for how to apply the various features of Studio Patches, and also some troubleshooting tips.

MIDI MERGING

An individual patch can contain more than one MIDI routing. As an example, let's say that you (operating your Masterman-88 keyboard controller) and your drummer (playing his new GeoSkin MIDI percussion pads) both want to control the same Vectorific sound module patch from your individual controllers. This is a classic example of MIDI merging.

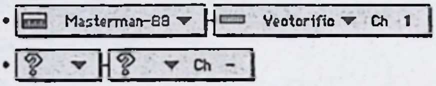
① **Choose New Patch from the Patch menu and create an Studio Patch with the Masterman-88 as the MIDI source and the Vectorific module as the MIDI destination.**



• Masterman-88 ▼ Vectorific ▼ Ch 1

Figure 9.1: Define the First Connection

② **Click the MIDI Source module icon and create a second connection below the first.**

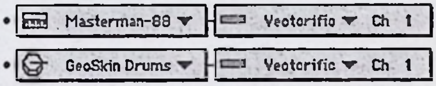


• Masterman-88 ▼ Vectorific ▼ Ch 1

• ? ▼ ? ▼ Ch –

Figure 9.2: Create a Second Connection

③ **Choose the GeoSkin drums as the MIDI source and the Vectorific as the MIDI destination.**



• Masterman-88 ▼ Vectorific ▼ Ch 1

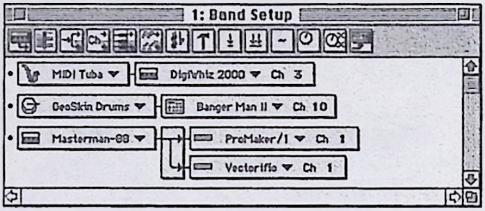
• GeoSkin Drums ▼ Vectorific ▼ Ch 1

Figure 9.3: A Complete MIDI Merging Patch

With this patch, both the Masterman-88 keyboard and the GeoSkin drums will play MIDI Channel 1 of the Vectorific module.

BAND ROUTINGS

You can route your entire band through the Studio 5. For instance, you could have the MIDI Tuba playing the Digiwhiz 2000, the GeoSkin drum pads playing the Banger Man II drum module, and the Masterman-88 keyboard playing a ProMaker/1 stacked with a Vectorific. This configuration would have a patch window similar to the one shown in Figure 9.4.


1: Band Setup

- MIDI Tuba → DigiWhiz 2000 Ch 3
- GeoSkin Drums → Banger Man II Ch 10
- Masterman-88 → ProMaker/1 Ch 1
- Masterman-88 → Vectorific Ch 1

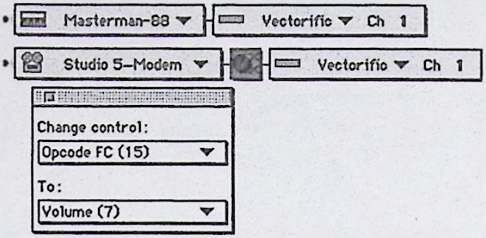
Figure 9.4: A Band Routing Patch

STUDIO 5 FOOTSWITCH IDEAS

The Studio 5's two footswitches (FS1, FS2) and one foot controller (FC1) can be used as controllers in a Studio Patch. To use the footswitches or foot controller in a patch, simply choose the Studio 5 as your MIDI source.

Volume Pedal

A simple volume pedal is created in the following example. The Masterman-88 controls MIDI Channel 1 of the Vectorific synth module. The foot controller (FC1) controls the volume of the Vectorific.


- Masterman-88 → Vectorific Ch 1
- Studio 5–Modem → Vectorific Ch 1

Change control: Opcode FC (15)

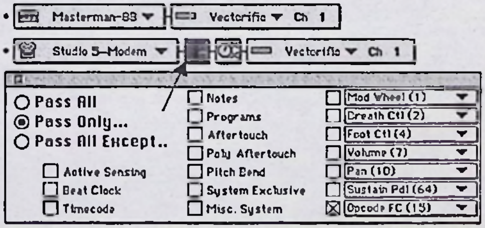
To: Volume (7)

Figure 9.5: Volume Pedal

NOTE: You must make certain that **Foot Controller In** *in the* **Studio 5** *menu is checked in order for Foot Controller information to be recognized. Foot Controller status is saved within the Studio 5's internal memory.*

Improved Volume Pedal

You can improve upon the above example by adding an Event Type Filter module. Use the filter to pass only Opcode foot controller data from the Studio 5 to the Vectorific as shown below. This prevents MIDI Time Code, if it's in use, from being sent to the Vectorific—thus thinning the MIDI data stream.


- Masterman-88 → Vectorific Ch 1
- Studio 5–Modem → Vectorific Ch 1

○ Pass All
● Pass Only...
○ Pass All Except..

☐ Active Sensing
☐ Beat Clock
☐ Timecode

☐ Notes
☐ Programs
☐ Aftertouch
☐ Poly Aftertouch
☐ Pitch Bend
☐ System Exclusive
☐ Misc. System

☐ Mod Wheel (1)
☐ Breath Ctl (2)
☐ Foot Ctl (4)
☐ Volume (7)
☐ Pan (10)
☐ Sustain Pdl (64)
☒ Opcode FC (15)

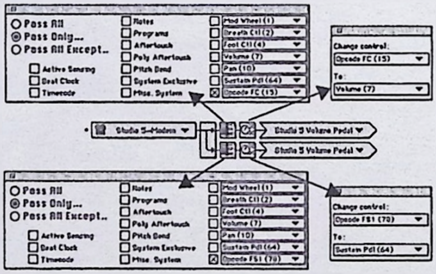
Figure 9.6: Improved Volume Pedal

Virtual Pedals

As another example, assume that you want to use the Studio 5 foot controller (FC1) as a volume pedal, and a Studio 5 footswitch (FS1) as a sustain pedal. Using Virtual Controllers is the easiest and most efficient way to handle this task.

① **Choose Edit Virtual Controllers from the Patch menu or click the Virtual Controllers button in the current patch document window to open the Virtual Controllers editing window.**

② **Design a Virtual Controller similar to the one shown in Figure 9.7. See Chapter 7 to learn about Virtual Controllers and Virtual Instruments.**



○ Pass All
● Pass Only...
○ Pass All Except...
☐ Active Sensing
☐ Beat Clock
☐ Timecode
☐ Notes
☐ Program
☐ Aftertouch
☐ Poly Aftertouch
☐ Pitch Bend
☐ System Exclusive
☐ Misc. System
☐ Mod Wheel (1)
☐ Breath Ctl (2)
☐ Foot Ctl (4)
☐ Volume (7)
☐ Pan (10)
☐ Sustain Pdl (64)
☒ Opcode FC (15)

Change control: Opcode FC (15)
To: Volume (7)

○ Pass All
● Pass Only...
○ Pass All Except...
☐ Active Sensing
☐ Beat Clock
☐ Timecode
☐ Notes
☐ Program
☐ Aftertouch
☐ Poly Aftertouch
☐ Pitch Bend
☐ System Exclusive
☐ Misc. System
☐ Mod Wheel (1)
☐ Breath Ctl (2)
☐ Foot Ctl (4)
☐ Volume (7)
☐ Pan (10)
☐ Sustain Pdl (64)
☒ Opcode FS1 (70)

Change control: Opcode FS1 (70)
To: Sustain Pdl (64)

Figure 9.7: Defining Virtual Pedals

You can now use these Virtual Controllers in any patch, without worrying if they are sending MIDI Time Code to your MIDI output devices. The following example illustrates the use of these Virtual Controllers in a patch where the Masterman-88 plays Channel 1 of the Vectorific while the Studio 55's foot controller controls Vectorific volume and the Studio 5's FS1 acts as a sustain pedal.

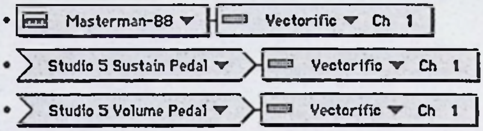
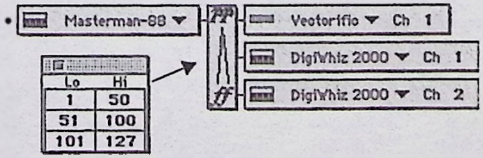


Figure 9.8: Using Virtual Pedals

EXPRESSIVE INSTRUMENTS

You can use velocity switching to trigger different sounds—the triggered sound depends on the note-on velocity. Velocity switching can add greater dynamic realism to instruments, or provide startling special effects. You can design patches to perform velocity switching if your synthesizers don't offer it. Even if your synthesizers do offer velocity splitting, Studio Patches provide the additional advantage of velocity switching *between* devices.

Assume, for example, that your Vectorific sound module has a nice pianissimo piano sound, and that the Digiwhiz 2000 sampler has good mezzo-forte piano and forte piano sounds. Build a patch similar to the one shown in Figure 9.9.



Lo	Hi
1	50
51	100
101	127

Figure 9.9: Velocity Switching

Notice that a soft touch plays the Vectorific piano sound, medium playing triggers a mezzo-forte piano sound on the Digiwhiz 2000 (Ch. 1), and banging on the keys plays a forte piano sound on the Digiwhiz 2000 (Ch. 2).

ONE FINGER CHORDS

To ease the pressure during a live performance or to compensate for a short reach, you can use splitters and transposers to build one-finger chords.

The patch example shown in Figure 9.10 produces a minor ninth chord from just one note.

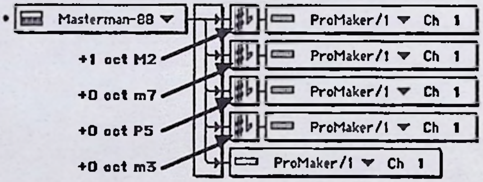


Figure 9.10: One Finger Chord

If you hit a C, then your sound module would produce the chord shown in Figure 9.11.

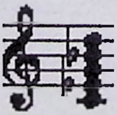
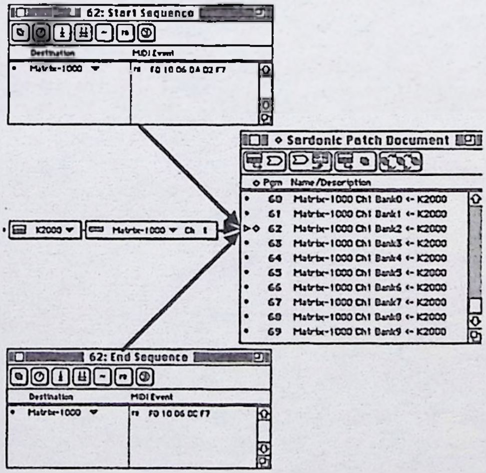


Figure 9.11: Cm9 Chord

BANK SELECTION

You can use the Start and End Sequences to send bank select messages to your synthesizers. For each bank in your synthesizer, simply design a Studio Patch that recalls and plays that bank.

The patch document shown in Figure 9.12 contains 10 different patches for playing the Matrix-1000 synthesizer. Each patch contains a Start Sequence with a system exclusive event that selects and locks a Matrix-1000 bank. The End Sequence unlocks the bank when you leave the patch.



62: Start Sequence

Destination	MIDI Event
Matrix-1000	F0 10 06 0A 02 F7

Sardonic Patch Document

Pgm	Name/Description
60	Matrix-1000 Ch1 Bank0 <- K2000
61	Matrix-1000 Ch1 Bank1 <- K2000
62	Matrix-1000 Ch1 Bank2 <- K2000
63	Matrix-1000 Ch1 Bank3 <- K2000
64	Matrix-1000 Ch1 Bank4 <- K2000
65	Matrix-1000 Ch1 Bank5 <- K2000
66	Matrix-1000 Ch1 Bank6 <- K2000
67	Matrix-1000 Ch1 Bank7 <- K2000
68	Matrix-1000 Ch1 Bank8 <- K2000
69	Matrix-1000 Ch1 Bank9 <- K2000

62: End Sequence

Destination	MIDI Event
Matrix-1000	F0 10 06 0C F7

Figure 9.12: Studio Patch Selects Matrix-1000 Bank

STUDIO PATCH PROBLEMS

A MIDI Source or Destination module contains a question mark

Question marks indicate undefined modules. Click anywhere to the right of the question mark to open a pop-up menu of MIDI devices as defined in your current Studio Setup document. See Part 2 for more details.

One or more MIDI Devices do not appear in the MIDI source pop-up menu

The MIDI device is being used elsewhere within the same patch as a MIDI source.

Patches don't work— MIDI source or destinations are italicized

You probably have a patch document that was created with a Studio Setup document other that the one that is now current. Either make the other Studio Setup document current, make another patch document current, or re-select any italicized MIDI Source or Destination modules in the current patch and save it. See Chapter 6 for more information.

Patches don't work— MIDI source or destinations are NOT italicized

Choose **Rebuild All** from the **Patch** menu.

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OPCODE
SYSTEMS INC

3950 Fabian Way, Suite 100
Palo Alto, CA 94303